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College of Business Administration

THESIS

Industrial Mobilization
and its Importance to Industry

by

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(B.S. in B.A. Boston University 1948)

Submitted in partial fulfillment of
the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION



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PREFACE

"Experts concluded that within two years of any future Pearl Harbor, the United States would be back in full war production of everything. The question was: would the United States have that much time?"

Newsweek, April 12, 1948.

"Because military strength is composed of equal parts of material and men, industry is an essential element in any security structure. One lesson that every war in the past century has taught us is that the nation most quickly mobilizing its entire industrial potential to the war effort is the one most likely to win."

R. P. Patterson, Secretary of War, November, 1945.

President Wilson once said, "In the sense in which we have been wont to think of armies, there are no armies in this struggle. There are entire nations armed. Thus the men who remain to till the soil and man the factories are no less a part of the army that is France than the men beneath the battle flags. It must be so with us. It is not an army that we must shape and train for war; it is a nation."

Problems of Industrial Mobilization, National Industrial Conference Board, January 16, 1943.

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4. The fourth part deals with the personnel and the organization of the work.

5. The fifth part contains a summary of the work and the conclusions reached.

6. The sixth part discusses the future prospects and the plans for the coming year.

7. The seventh part contains a list of the references and the sources of information.

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9. The ninth part contains a list of the names of the persons who have been consulted during the work.

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CHAPTER I

INTRODUCTION

1. Position of the United States in World Affairs

Today the United States finds itself in the forefront of world leadership, having been forced there by the international developments of the past few decades. This position of importance carries with it many responsibilities and dangers.

Certainly no potential enemy will ever again under-rate our power and our great industrial capacity when planning any future war, and certainly any future conflict of any importance will involve this country.

2. Demands of Total War

Modern warfare embraces the entire economy of the warring nations, depending not only on the men in the trenches, on the seas, and in the air, but also on the men on the farms, in the mines, in the forests, and in the factories. The military forces, the industrial forces, and the agricultural forces all stand on an equal footing with equal responsibilities. Machines and industrial capacity hold as important a place in the economic setting as do their human creators.

We have learned from two world struggles that belligerent nations demand from the industrial capacity of their countries a level of production which is far greater than anything attainable under ordinary peacetime conditions.

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A total war demands unity of purpose with all of the resources of the warring nations, all of the productive capacity, all of the consumptive activities - all of the economic activities directed toward the defeat of the enemy. It is obvious that such an all-out offensive may be carried on only with firm government direction.

Total war is a conflict between sovereign states, sponsored and waged by entire societies in arms. Total war has no specific objectives, having as its aim the utter destruction of the enemy nations and the complete disappearance of these enemy nations from the face of the earth.

Modern war is fought on land, on the sea, and in the air with modern technological, psychological, and economic weapons being employed. The lines of demarcation which used to divide war and peace, belligerents and non-belligerents is fast fading away.

3. Past Mobilization Efforts

In a democratic country the defense effort rests firmly on the rational decision of a free people, while the military or dictatorial state, in its very existence, is bound to rest on emotion and distorted facts.

The government of the United States acts as the servant of the people and not as their master. In peacetime, regimentation has been a thing abhorred, a tool of dictators, and out of tune with our free American way of life.

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We have been successful in all of our past wars because of our tremendous potential and also because we have had time to bring this potential into play. One factor without the other is of little use. Let us consider the usual pattern of mobilizing for war in the past.

The United States would remain unprepared until the aggressor nation was fully armed and well under way in a program of ruthless expansion. The people of the United States would remain apathetic until standing at the very brink of war. Then they would start arming only half-heartedly in a meager defense movement. Finally, when the blow was struck and this country was literally forced into the war, the people would rise mightily and conquer the enemy.

When the struggle was over, our people would erase the unpleasant memories and turn their attentions to the problems of peace once again, forgetting the inconveniences and difficulties of war.

We could, in the past, sit smugly behind the protection of two oceans as natural defenses. We could wait and see in the past because warfare moved slowly and the possibilities of invasion were academic questions due to the difficulties of supply. We had time - time to marshal our resources, time to convert our industrial potential to the business of making war goods, time to develop synthetic rubber, time to develop atomic bombs, and time to recruit and train armies.

We made great technological strides in the past

THE HISTORY OF THE UNITED STATES OF AMERICA

by James Osgood and Charles C. Smith
New York: The United States of America, 1877
The History of the United States of America, from the first settlement of the continent to the present time, is a subject of great interest and importance. It is a subject which has attracted the attention of the most distinguished historians of the world. The history of the United States is a history of the struggle for freedom and independence, of the growth of a great nation, and of the development of a great civilization. It is a history which has inspired the hearts of men and women everywhere, and which has given rise to the most noble and heroic deeds of the human race. The history of the United States is a history which has shaped the destiny of the world, and which has given rise to the most noble and heroic deeds of the human race.

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war, but so did the rest of the world, and now science has shrunk our two oceans to almost insignificant defenses by the perfection of new weapons and long-range aircraft.

4. The Present Emergency

The so-called "cold war" has been directed mainly at the United States, and the present controversy over the Berlin blockade is so serious a threat to world peace that it has been referred to the Security Council of the United Nations.

It is sheer folly to think that the United States would not be the first and primary target of any future aggressor because of the lessons learned in the past. We must face reality and understand that we will not have the precious time to prepare, in the event of a future war, which has proved to be our salvation in the past.

It is the duty of our government, therefore, to foresee its possible role in any future conflict and to formulate complete plans for total mobilization of the entire economy. Such planning must cover three broad areas of mobilization: mobilization of industry, mobilization of raw materials, and mobilization of manpower. The planning for mobilization must also embrace the necessary controls to maintain an effective economy.

Military and economic mobilization must be complete, precise, and capable of instant execution for it is clear that we will not have the time to improvise that we had in

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World War II. Our economic resources are very definitely not unlimited, and the effectiveness and speed with which we use our available resources may spell the difference between victory and defeat in any future conflict.

5. Scope of This Thesis

This thesis proposes to show why it is so necessary to plan for the mobilization of industry and what part the industry of the United States will play in this planning. A brief description of the organization for national defense is given along with the procedure followed in surveying a plant and assigning a tentative production schedule, not only to show what government agencies are administering the function, but also to give a picture of industry's place in the procedure.

Industrial Mobilization is an elusive term demanding careful definition. It could well be defined as the plan for mobilizing the industrial plants only, that is, converting plants from the production of typewriters to machine guns, stockings to parachutes, or automobiles to aircraft; or it could be defined as the detailed plans for mobilizing and controlling manpower, transportation, power, raw materials, plant capacity, machines and tools, and finances, as well as the controls necessary to maintain a stable economy. Some writers use the terms industrial mobilization and economic mobilization interchangeably, although economic mobilization is a much broader term.

This thesis confines its consideration of industrial mobilization to those problems closest to industry, demanding careful attention on the part of industry, such as: mobilization of manpower, materials, machine tools, and facilities, as well as the efforts directed toward the strategic relocation of industry.

For the purposes of this study, economic controls necessary to maintain a stable economy as well as possible tax legislation in the event of a future emergency will be considered as outside of the sphere of industry's influence, so outside of the scope of industrial mobilization. In short, the term industrial mobilization planning will be used to include those activities necessary to mobilize the plants themselves and those factors necessary for the operation of the plants.

Industrial mobilization planning consists essentially of planning, in advance of any future emergency, exactly what industry, the government, and the armed forces will have to do to cope with that emergency. The purpose is to permit a smooth but speedy transition from peacetime production to a wartime production which is capable of caring for the needs of the United States Armed Forces, the allies of the United States, and the civilian population. It will cause a reduction of the uncertainties that arise during an emergency and help to save that very precious and elusive factor of time. It will permit the most efficient utilization of plants and equipment and also provide a basis for forecasting

the manufacture of civilian goods.

Planning for industrial mobilization extends all the way from the highest levels of the Armed Forces to the managers of the smallest concerns capable of manufacturing for the war effort. The burden of planning falls heavily upon the shoulders of industry, so the success or failure of the program from now on depends on the willingness of private industry to co-operate.

It is necessary to determine the needs of the future war time economy, take an inventory of the country's industrial capacity, assign the capacity of individual plants to the Armed Forces in accordance with the needs of each branch, and anticipate all other additional activities which are necessary to maintain the proposed production schedule.

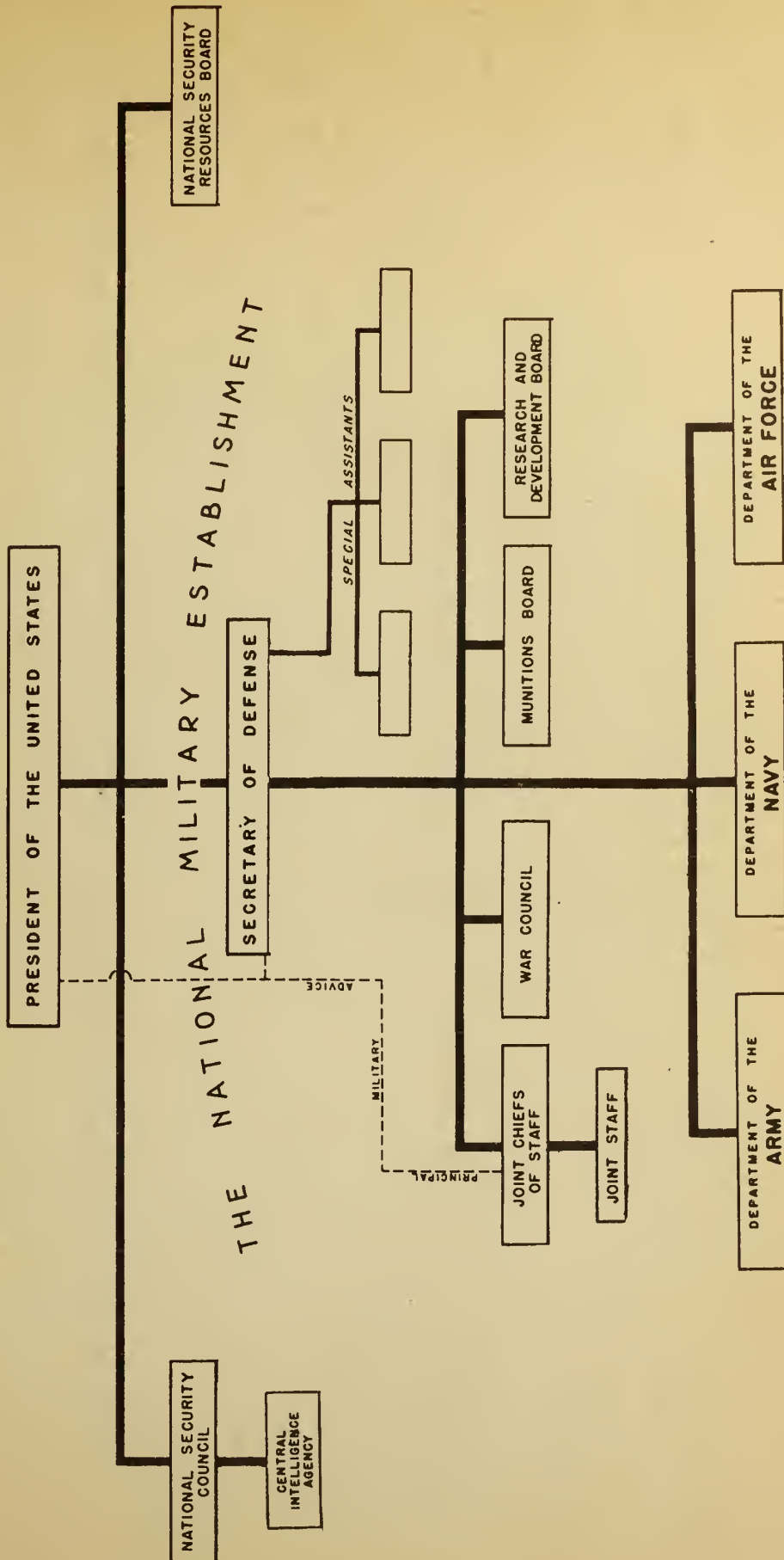
6. Three Assumptions for Mobilization Planning

The present planning for industrial mobilization is based on three fundamental assumptions concerning the theoretical war to come. The most important of these assumptions is that the next war will probably be a major one, requiring complete and rapid utilization of resources, industry, and manpower. The program is further tempered by the assumption that the United States will be attacked initially and without warning because any potential enemy must have learned from the most recent war that it is essential to neutralize the United States to achieve world domination. The third assumption is that our industrial centers will be

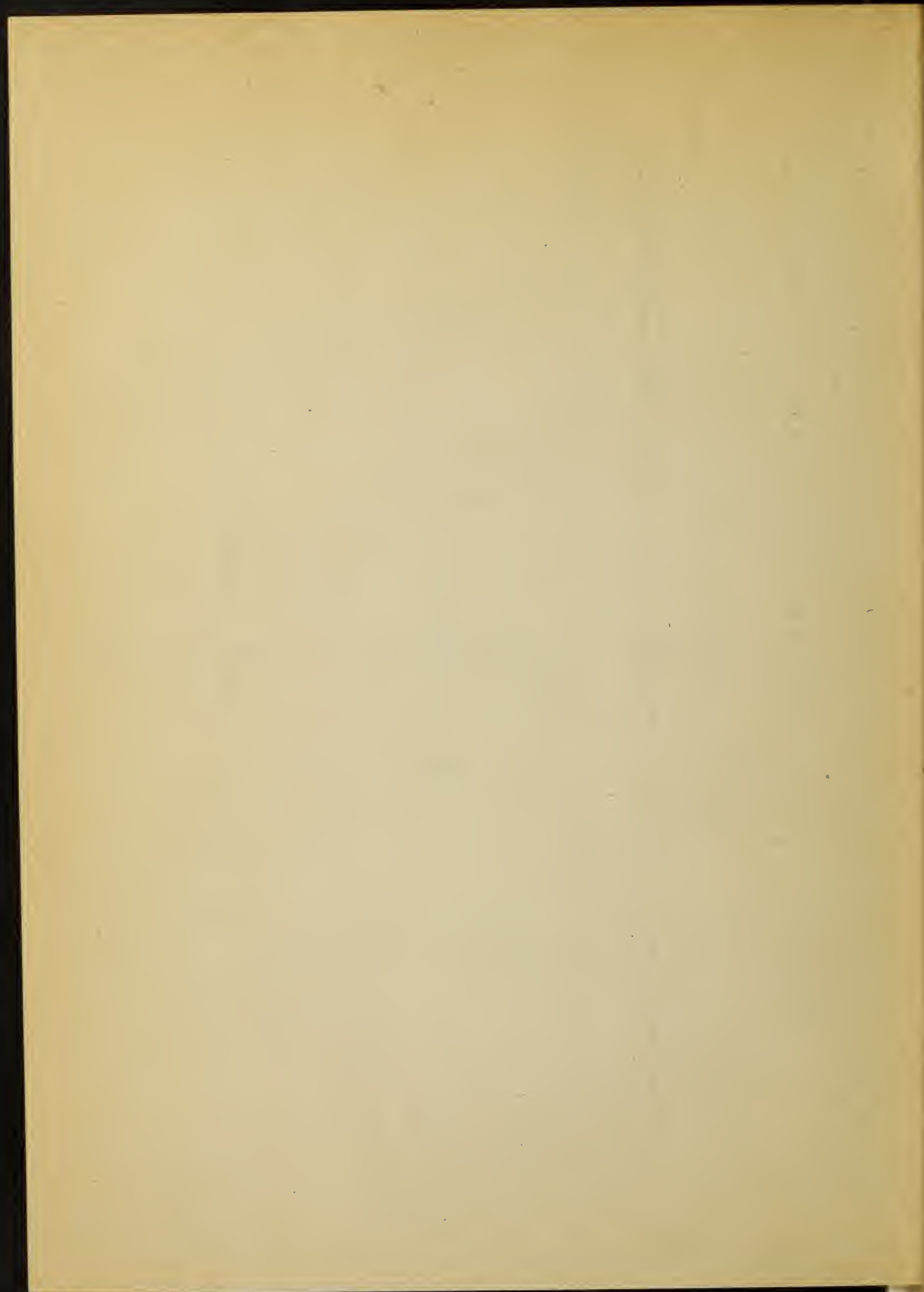
the focal point of attack with war producers as high priority targets.

EXHIBIT I

ORGANIZATION FOR NATIONAL SECURITY



Source: Distributed at a course on Economic Mobilization presented at Harvard University from November 13-24, 1948, by the Industrial College of the Armed Forces



CHAPTER II

ORGANIZATION

1. Background

In the National Security Act of 1947, the Industrial Mobilization Plan of the United States was given form.¹ The deadline of the first comprehensive plan for industrial mobilization is 1952 with less complete plans due annually.

Among the other agencies created under the provisions of this act, were two organizations created to cope with the problems of mobilization for the military, civilian, and industrial segments of the economy. These two organizations are the National Security Resources Board and the National Military Establishment. (See Exhibit I).

2. National Security Resources Board

The National Security Resources Board, the top planning agency for industrial mobilization, is a permanent civilian agency created to counsel the President on co-ordinating military, industrial, and civilian mobilization plans in the event of any future emergency. This board must cope with the problem of striking the most effective balance between military and civilian demands.

This agency must decide how many men can be thrown against the enemy and supplied with the necessary arms and supplies without stripping the civilian economy to a point

1. See Appendix for copy of this act.

THEORY

CHAPTER I

SECTION I

The first part of the theory is the study of the properties of the system. This is done by considering the various states of the system and the transitions between them. The second part of the theory is the study of the dynamics of the system. This is done by considering the equations of motion and the various approximations that can be used to solve them. The third part of the theory is the study of the thermodynamics of the system. This is done by considering the various thermodynamic quantities and the relationships between them. The fourth part of the theory is the study of the statistical mechanics of the system. This is done by considering the various statistical ensembles and the relationships between them. The fifth part of the theory is the study of the quantum mechanics of the system. This is done by considering the various quantum states and the relationships between them. The sixth part of the theory is the study of the field theory of the system. This is done by considering the various field configurations and the relationships between them. The seventh part of the theory is the study of the string theory of the system. This is done by considering the various string configurations and the relationships between them. The eighth part of the theory is the study of the M-theory of the system. This is done by considering the various M-theory configurations and the relationships between them. The ninth part of the theory is the study of the brane theory of the system. This is done by considering the various brane configurations and the relationships between them. The tenth part of the theory is the study of the higher-dimensional theory of the system. This is done by considering the various higher-dimensional configurations and the relationships between them.

where it can not contribute most satisfactorily to the war effort. Only by striking a balance is it possible to use the nation's resources most effectively.

This board must devise plans for recruiting men and channeling them into both the armed forces and industry. It must create plans for developing, applying, and administering government controls to make the most productive use of the nation's manpower and hold workers to essential jobs.

Under the jurisdiction of the National Security Resources Board also come the problems of planning for control of the raw materials of the country, the production and distribution of power, transportation and communications facilities, production facilities, and even housing. To be effective, this planning must be thorough and carefully thought through in detail.

Organizational changes within the federal government to meet the demands of a war time economy must also be planned, and the blueprints must be drawn for maintaining a stable economy with government control during times of stress.

This board must formulate policies for building up adequate reserves of critical and strategic materials, policies regarding stockpiling and conservation of these materials.

Studies must be made concerning the possible strategic relocation of all industries, services, government

activities, and all economic activities necessary to the conduct of a war.

In addition, the National Security Resources Board must maintain a continuous inventory of our resources of men and materials, as well as our production facilities, and a continuous appraisal of the demands for these factors in any future war.

From this description of the duties of the National Security Resources Board, it is apparent that this board must maintain a comprehensive outlook of the whole economy and keep a fine sense of values to carry out its mission.

3. The National Military Establishment

The National Military Establishment consists of the organizations headed by the Secretary of Defense: the Joint Chiefs of Staff, the War Council, the Munitions Board, the Research and Development Board, the Department of the Army, the Department of the Navy, and the Department of the Air Force. The National Military Establishment will submit its planned wartime requirements for manpower, materials, and other resources to the National Security Resources Board to be reviewed and consolidated with the estimated requirements of the civilian and industrial segments of the economy in order to determine whether or not planned wartime requirements can be met by available resources.

a. The Secretary of Defense

The Secretary of Defense serves as the principal

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assistant to the President in all matters pertaining to national security. It is his duty to establish general policies and programs for the National Military Establishment, to exercise general direction, authority, and control over the establishment, to eliminate unnecessary duplication or overlapping in procurement, supply, transportation, storage, health, and research for the establishment, and to supervise and co-ordinate budget matters of the component activities under the National Military Establishment.

b. Joint Chiefs of Staff

The Joint Chiefs of Staff serve as the principle military advisors to the President and to the Secretary of Defense. They are responsible for the strategic planning for and the general direction of the Armed Forces. They formulate joint logistic plans and assign logistic responsibility to the three services. They are responsible for establishing necessary unified commands in strategic areas, for co-ordinating the educational policies of the services, for formulating joint training policies, and for reviewing major military material and personnel requirements under their strategic and logistic plans. In addition, they are responsible for providing United States representation on the military staff committee of the United Nations.

c. The War Council

The War Council is an advisory body to the Secretary of Defense on matters pertaining to broad policy matters of the Armed Forces, considering and reporting on

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such matters as the Secretary may direct.

d. The Munitions Board

The Munitions Board is the most important body in the National Military Establishment as far as problems of industrial mobilization planning are concerned. This board was created as a subdivision of the National Military Establishment under the Secretary of Defense to plan for the military aspects of industrial mobilization and co-ordinate the needs of the three branches of the Armed Forces with regard to the relative priorities of their programs.

It is the function of this board to deal with the assignment of procurement responsibility among the several branches of the military services in such a manner as to consolidate the procurement of as many items as possible, to standardize specifications wherever possible, and to allocate the purchase of technical and commonly used items to one service.

Acting within the over-all policies laid down by the National Security Resources Board, the Munitions Board must prepare estimates of the country's industrial potential and its manpower resources in order to evaluate the ability of the United States to meet the military demands of any future war.

It is this board which correlates military and civilian needs by maintaining liason with all other agencies and bureaus engaged in mobilization planning. A vital

phase of this work is formulating policies regarding the procurement, use, and stockpiling of certain strategic and critical materials to the value of \$3.154 billions and setting aside machine tools worth \$500 millions.

The Munitions Board also collects and analyzes all materials and personnel requests by all of the agencies planning to meet military needs, making its recommendations to the Secretary of Defense.

e. The Research and Development Board

The mission of the Research and Development Board is to advise the Secretary of Defense on the status of scientific research in all matters pertaining to national security and to assure that adequate provisions have been made to keep research and development activities abreast of all new developments in the world of science.

This board is responsible for the preparation of an integrated military research and development program, for recommendations to co-ordinate research and development programs among the services, and for allocating responsibility for specific joint programs within the three services.

It must advise the Secretary of Defense on trends in scientific research which affect the national security, and it must take steps to insure constant progress in this field. This board also formulates policies on research and development activities outside the National Military Establishment. Finally, the Research and Development Board must

carefully examine the effect of research and development in all fields of science on the strategic plans formulated by the Joint Chiefs of Staff, and it must report the potential effect of new developments to the Joint Chiefs of Staff.

4. Two Other Agencies Concerned With National Security

a. The National Security Council

The National Security Council is an advisory agency to the President and confines its agenda to subjects requiring action by the President. It is concerned with matters pertaining to the integration of domestic, foreign, and military policy.

This council recommends policies regarding the actual and potential military power of the United States, considering the objectives, commitments, and risks of this country. It recommends action on matters of common interest to federal agencies concerned with national security.

b. The Central Intelligence Agency

The Central Intelligence Agency keeps the National Security Council informed on the interests, intentions, and capabilities of any nation which might conceivably affect the security of the United States. It has no policing functions, but rather serves as a source of information. Its mission is to co-ordinate the intelligence activities of the federal agencies concerned with national security.

Its duties are to advise the National Security Council on the national security intelligence activities

of all federal departments and agencies, to recommend necessary steps to co-ordinate such activities to the National Security Council, to correlate, evaluate, and disseminate national security intelligence, and to render intelligence service to other federal departments and agencies.

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CHAPTER III

STEPS IN INDUSTRIAL MOBILIZATION PLANNING

1. Overall Procedure

The first step in the planning for industrial mobilization takes place at the highest levels of military command. The Joint Chiefs of Staff develop the strategic concepts of any possible war and determine the roles of the three branches of the Armed Forces as well as their possible sizes. The Chiefs of Staff must decide problems such as: the possible date of any future war, the possible location of the fighting, the nature of the fighting, the nature and strength of the enemy's forces, the duration of any future war, climatic conditions to be encountered, and innumerable strategic considerations of international scope.

The individual branches of the Armed Forces analyze the strategic requirements of their forces and break them down into specific and detailed needs of munitions and supplies.

The Munitions Board receives the schedules of the Army, the Navy, and the Air Force and consolidates them into one complete schedule of military requirements. The board co-ordinates and standardizes requirements at this point.

The National Security Resources Board receives the schedule of military requirements from the Munitions Board and co-ordinates the military needs with the essential needs of the civilian economy. The industrial capacity of the

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AND OF THE LONDON MEDICAL SOCIETY

FOR THE YEAR 1875

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country must be allocated in such a way that it is most effective in carrying out the war effort and is least disruptive.

The National Security Resources Board notifies the Munitions Board regarding the ability of the present industrial capacity to care for the needs of the military forces. The Munitions Board presents the three branches of the Armed Forces, which have been assisting industry in planning, with their co-ordinated requirements, and each branch then contacts industry to work out the details.

The three branches survey the industrial capacity of the country and request allocation of the capacity of specific firms from the Munitions Board. The confirmation of the allocation and the working out of the production schedules with the individuals is the heart of industrial mobilization planning.

With detailed plans for mobilization of industry completed, our country will be better prepared to cope with any future emergency which might arise. In the event of an emergency, the President would declare an emergency and ask for war powers. Congress would grant the President war powers and authorize him to put into effect the plan of industrial mobilization. Mobilization would then begin at once without unnecessary delays and confusion.

2. Allocation of Manufacturing Capacity

Allocation of manufacturing capacity is defined as:

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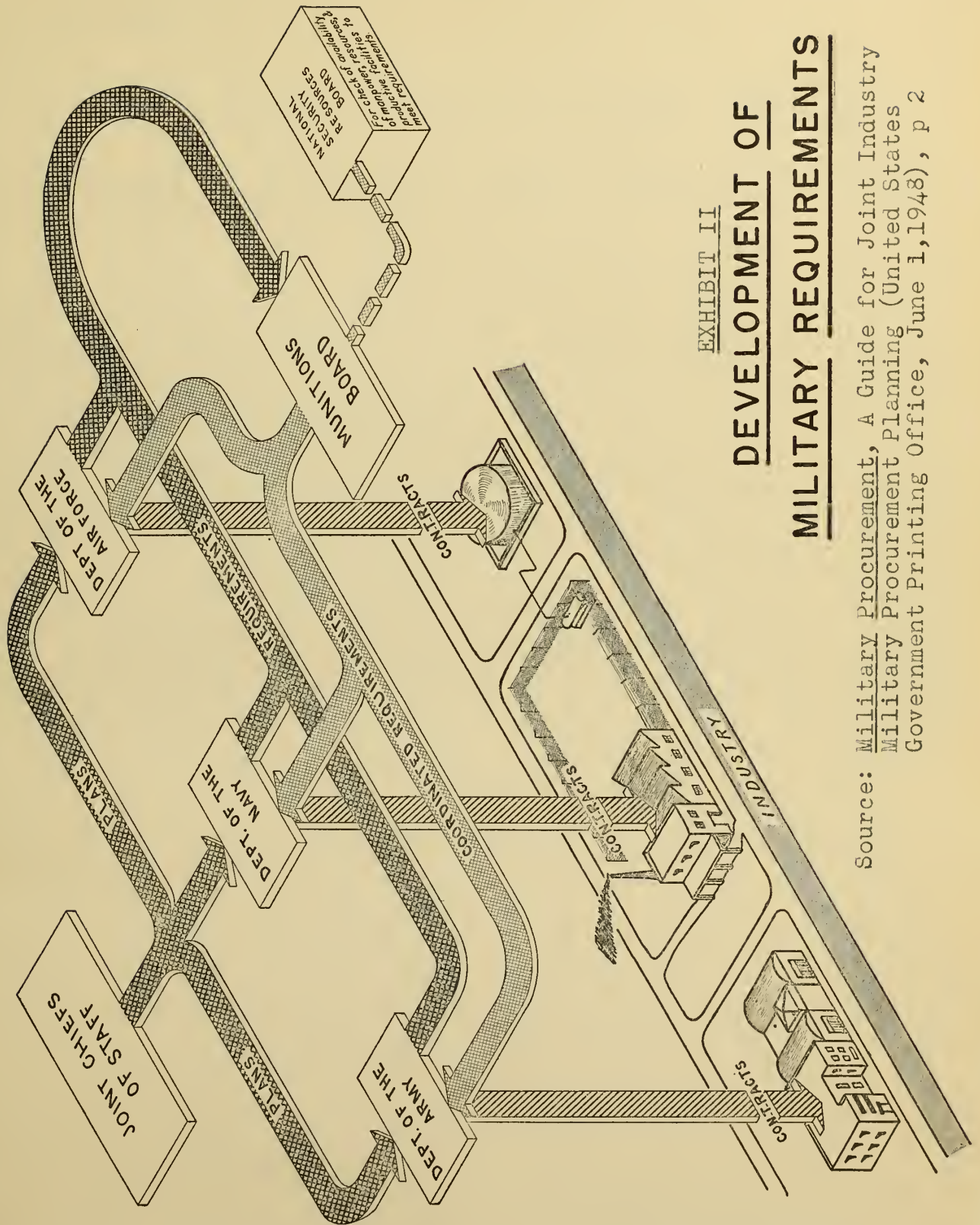


EXHIBIT II

DEVELOPMENT OF MILITARY REQUIREMENTS

Source: Military Procurement, A Guide for Joint Industry
Military Procurement Planning (United States
Government Printing Office, June 1, 1948), p 2



The assignment of production capacity in manufacturing facilities by the Munitions Board to a military department for its procurement agencies to accomplish peacetime planning for wartime procurement of designated quantities of specified items of materiel at a specified rate of production.¹

This phase of industrial mobilization planning follows the presentation of co-ordinated requirements to the Armed Forces by the Munitions Board. The objective is to discover how quickly the wartime requirements can be obtained and where.

Allocation of capacity will eliminate confusion in the assignment of the initial wartime peak load and will be a very important factor in achieving the smooth and immediate conversion from peacetime production to producing for a war economy.

Industry will be brought into the program on a purely voluntary basis and will be showed its role in any future crisis. Each concern will be encouraged to co-operate in formulating the plans and will be urged to learn the part it can play.

The various government agencies will not have to bid against each other for the capacity of industrial plants,

1. Munitions Board, Military Aspects of Industrial Mobilization, Operating procedure annex #47, (Washington, D.C., The National Military Establishment, 1 March, 1948) p. 3.

The first part of the paper is devoted to a discussion of the
theoretical aspects of the problem. It is shown that the
problem is equivalent to a problem in the theory of
differential equations. The second part of the paper is devoted to a
discussion of the numerical aspects of the problem. It is shown that the
problem can be solved by the method of finite differences.

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The third part of the paper is devoted to a discussion of the
practical aspects of the problem. It is shown that the
problem can be solved by the method of finite differences. The
fourth part of the paper is devoted to a discussion of the
theoretical aspects of the problem. It is shown that the
problem is equivalent to a problem in the theory of
differential equations. The fifth part of the paper is devoted to a
discussion of the numerical aspects of the problem. It is shown that the
problem can be solved by the method of finite differences.

The sixth part of the paper is devoted to a discussion of the
practical aspects of the problem. It is shown that the
problem can be solved by the method of finite differences.

as was the case in the last war, but rather will have their efforts concentrated on constructive activities. Co-operation, not competition, will be fostered.

Through survey work and allocation of capacity, the government will be accomplishing a dual purpose. It will be primarily collecting an up-to-date record of competent producers with knowledge of their capacity to produce specific goods, and it will also be collecting data as to what war time demands can not be met with existing facilities. By discovering what products can not be made under existing conditions, the planning officials will be able to determine what additional facilities will have to be built or what existing facilities will have to be enlarged to meet all requirements.

The final negotiation of contracts will await the declaration of an emergency, but the final negotiations will be a mere formality to reach an agreement as to prices and terms. The details of the contracts will have been worked out beforehand, cost estimates worked out, and production schedules approved. When allocation is finally completed, the industrial potential of the United States will be ready to be mobilized, leaving only the clearance and approval of contracts to be completed.

Emphasis has been placed on the military needs and war time requirements, but mobilization planning must make proper allowances for the civilian needs. Civilian needs

are to be cared for by reserving fifty percent (50%) of the normal peacetime capacity of any given plant in an industry for civilian production. In other words, the military needs will be met with the remaining fifty percent of normal production plus any possible overtime or additional shifts.

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CHAPTER IV

CONDUCTING THE PLANT SURVEY

1. A Typical Example

In order to visualize the problems faced by the services in this phase of industrial mobilization planning, let us consider, as a typical example, the procedure which was followed by the Boston Quartermaster Industrial Mobilization District Office in surveying a plant and requesting allocation of capacity for the manufacture of duck cloth.¹

2. The Industrial Specialist

To carry on most of the survey work, the Boston Industrial Mobilization Office employs industrial specialists, civilian workers whose backgrounds and training well qualifies them for this type of contact work. These industrial specialists must have had at least six years of progressively responsible experience in the industry concerned at an important managerial level, or a combination of college work and experience at a high managerial level, because they must confer with the heads of important manufacturing firms to win their co-operation and gain their interest. They must also possess an agreeable, impressive personality and demonstrate initiative and aptitude for analytical research.

The work of an industrial specialist is doubly difficult. In the first place, he has to sell managements

1. As observed on a field trip, October 18, 1948.

THE

CONSTITUTIONAL HISTORY

OF THE

UNITED STATES OF AMERICA

BY

JOHN C. CALHOUN

OF THE SENATE OF THE UNITED STATES

IN TWO VOLUMES.

VOLUME I.

THE

CONSTITUTION OF THE UNITED STATES

OF AMERICA

AS IT IS

AND AS IT SHOULD BE

BY

JOHN C. CALHOUN

OF THE SENATE OF THE UNITED STATES

IN TWO VOLUMES.

VOLUME II.

NEW YORK: PUBLISHED BY J. B. LIPPINCOTT, 1835.

on the idea of industrial mobilization and win their confidence and co-operation in order to do an effective job. As was stated earlier, industry is co-operating on a strictly voluntary basis, so the companies approached are free to accept or reject the request for information. In the second place, the industrial specialist has to be able to evaluate a specific situation and make recommendations to the operating management.

Since duck is a textile item, the industrial specialist assigned to this task is a specialist in the textile industry, a graduate of a textile college who had served in the industry for several years in private enterprise.

3. Preliminary Work

From the estimated mobilization requirements for the Boston District, determined by the New York Quartermaster Office, this specialist obtained the quantity of duck required for the two year period following "M Day". This figure gave him the goal for which he must work and the basis of his planning.

From the List of Facilities Requested by the Office of the Quartermaster General for Industrial Capacity Allocation the specialist selected one firm to see if the desired capacity was available. This step is the beginning of the final and detailed phase of industrial mobilization planning.

This list gives the following information for each concern: the name, the location, the Munitions Board request number, the Quartermaster request number, the status of the facility, the chairman, the Armed Services Procurement Officer, who co-ordinates planning in specific plants, and all other claimants.

To serve as an introduction to the plant and to seek an appointment with the management officials, a letter was sent to the firm from the Quartermaster Office. This letter was a copy of a form letter phrased with tact and diplomacy to avoid arousing an unfavorable reaction.

In preparation for the plant survey, the industrial specialist determined how many contracts were awarded to this firm from June, 1940, through September, 1945. The nature of these contracts might give an indication of how large a percentage of the mobilization requirements can be met by any specific firm. Since the financial responsibility of a firm is also vitally important as an indicator of its reliability as a supplier, the specialist also checked the firm's credit status from standard sources, such as: Dun and Bradstreet or the Thomas Register.

4. Contacting the Plant

The data obtained on a plant visit are recorded on MB form 104 (see exhibit III).

In conducting a plant survey, it is always the policy to contact the top men in any organization : pres-

(After Data Entered on Form)

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Page 1 of 5 pages

WASHINGTON 25, D. C.

BUDGET BUREAU NO. 32-R010.
APPROVAL EXPIRES 30 JUNE 49.

SECTION VIII OF ANNEX NO. 47, *Allocation of private industrial capacity for procurement planning of the Armed Services.*

1. PARENT COMPANY

ADDRESS

SUBSIDIARY OR DIVISION

ADDRESS

NAME OR NUMBER OF PLANT SURVEYED

ADDRESS

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DUN AND BRADSTREET

THOMAS REGISTER

3.	PRESENT PRODUCTS
1.	1. <i>Chrysomelids</i>
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100.	100. <i>Chrysomelids</i>

[illegible]

4. MAJOR ITEMS PROCURED FROM SUBCONTRACTORS FOR PRESENT PRODUCTS EXCLUDING BASIC MATERIAL

ITEM	SCC NO. (4 digits)	NAME AND LOCATION OF SUBCONTRACTOR

1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813

7. IS PLANT NOW ENGAGED IN RESEARCH AND DEVELOPMENT WORK FOR THE ARMED SERVICES? <input type="checkbox"/> YES <input type="checkbox"/> NO					
8. REAL ESTATE					
ACRES			FLOOR AREA (In square feet)		
TOTAL NOW OCCUPIED		AVAILABLE FOR EXPANSION	TOTAL NOW OCCUPIED		AVAILABLE FOR EXPANSION
STORAGE AREA (In square feet)			ENVIRONMENT OF LOCATION		
INDOOR	OUTDOOR, COVERED	OUTDOOR, OPEN	<input type="checkbox"/> CITY	<input type="checkbox"/> SUBURBAN	<input type="checkbox"/> RURAL
9. SECURITY					
PLANT PROTECTION		YES	NO	FIRE PROTECTION	
ALARM SYSTEM				ALARM SYSTEM	
GUARD FORCE				SPRINKLER SYSTEM	
FENCED				OTHER	
10. TRANSPORTATION FACILITIES					
RAILROADS			AIR		
SIDING CAPACITY		NEAREST OTHER RAIL LOADING POINT		NEAREST SUITABLE CARGO AIRPORT	
CARS		MILES		MILES	
WATER			TRUCK		
INLAND	DEEP SEA	DOCK FRONTAGE	SUITABLE HIGHWAYS		SUITABLE LOADING FACILITIES
<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	FT.	<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO
PERSONNEL		ARE PUBLIC TRANSPORTATION FACILITIES ADEQUATE, INCLUDING ACCESSIBILITY?		WHAT PERCENT OF EMPLOYEES REACH WORK BY PUBLIC TRANSPORTATION?	
		<input type="checkbox"/> YES <input type="checkbox"/> NO		%	
11. HOUSING AND COMMUNITY					
HOUSING	IS COMPANY-OWNED HOUSING PROVIDED?		<input type="checkbox"/> YES <input type="checkbox"/> NO; IF SO, IS IT ADEQUATE?		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IS NONCOMPANY-OWNED HOUSING ADEQUATE?		<input type="checkbox"/> YES <input type="checkbox"/> NO		
COMMUNITY FACILITIES					
ARE COMMUNITY FACILITIES ADEQUATE (Schools, restaurants, shopping districts, etc.)?				<input type="checkbox"/> YES <input type="checkbox"/> NO	
12. POWER AND FUEL					
TYPE OF POWER USED		PERCENT OF POWER		FUEL USED	
		<input type="checkbox"/> MANUFACTURED <input type="checkbox"/> PURCHASED		<input type="checkbox"/> COAL <input type="checkbox"/> GAS	
				OTHER	
13. EMPLOYMENT					
CLASSIFICATION OF EMPLOYEES		PRESENT		MAXIMUM	
		TOTAL	MALE	TOTAL	MALE
ADMINISTRATIVE AND MANAGERIAL					
ENGINEERING, INCLUDING RESEARCH AND DEVELOPMENT					
CLERICAL AND SALES					
SERVICE AND MAINTENANCE					
PRODUCTION AND MANUFACTURING					
TOTAL					
SKILLED					
SEMI-SKILLED					
UNSKILLED					
GRAND TOTAL					
14. PLANT WORKWEEK					
WORK HOURS PER WEEK					
PRESENT		HOURS		MAXIMUM	
				HOURS	
15. TOOL DEPARTMENT CAPACITY					
IS TOOL DEPARTMENT CAPABLE OF PRODUCING JIGS, DIES, AND FIXTURES FOR PRESENT PRODUCTS? <input type="checkbox"/> YES <input type="checkbox"/> NO					

<p>1. NAME (Last, First, Middle Initial)</p> <p>2. DATE OF BIRTH (MM/DD/YYYY)</p> <p>3. SEX (M/F)</p> <p>4. RACE (A/B/C/D/E)</p> <p>5. ETHNICITY (H/S/O)</p> <p>6. HEIGHT (inches)</p> <p>7. WEIGHT (pounds)</p> <p>8. BLOOD TYPE (A/B/AB/O)</p> <p>9. MARITAL STATUS (M/S/D/W)</p> <p>10. OCCUPATION</p>			
<p>11. ADDRESS (Street, City, State, Zip)</p> <p>12. PHONE (Home, Cell, Work)</p> <p>13. EMAIL</p> <p>14. SOCIAL SECURITY NUMBER</p> <p>15. DRIVER LICENSE NUMBER</p> <p>16. VEHICLE REGISTRATION NUMBER</p> <p>17. VEHICLE MAKE/MODEL/YEAR</p> <p>18. VEHICLE COLOR</p> <p>19. VEHICLE VIN</p> <p>20. VEHICLE LICENSE NUMBER</p>			
<p>21. EDUCATION (High School, College, Graduate School)</p> <p>22. DEGREE (Bachelor's, Master's, Doctorate)</p> <p>23. MAJOR</p> <p>24. MINOR</p> <p>25. INSTITUTION</p> <p>26. GRADUATION DATE</p> <p>27. GPA</p> <p>28. TEACHER/PROFESSOR</p> <p>29. COURSE</p> <p>30. GRADE</p>			
<p>31. EMPLOYMENT (Employer, Position, Start Date, End Date)</p> <p>32. SALARY</p> <p>33. BENEFITS</p> <p>34. REASON FOR LEAVING</p> <p>35. EMPLOYER ADDRESS</p> <p>36. EMPLOYER PHONE</p> <p>37. EMPLOYER EMAIL</p> <p>38. EMPLOYER WEBSITE</p> <p>39. EMPLOYER TYPE</p> <p>40. EMPLOYER INDUSTRY</p>			
<p>41. REFERENCES (Name, Address, Phone, Email, Relationship)</p> <p>42. REFERENCES (Name, Address, Phone, Email, Relationship)</p> <p>43. REFERENCES (Name, Address, Phone, Email, Relationship)</p> <p>44. REFERENCES (Name, Address, Phone, Email, Relationship)</p> <p>45. REFERENCES (Name, Address, Phone, Email, Relationship)</p>			

16. EQUIPMENT

LIST GENERAL CLASSES OF EQUIPMENT (Detailed listing not required)

17. RECORDED INTEREST IN PLANT AT TIME OF SURVEY

ARMY

☐ CE ☐ CMLC ☐ MED ☐ ORD ☐ QM ☐ SC ☐ TC

NAVY

☐ BUAER ☐ BUDOCKS ☐ BUMED ☐ BUORD ☐ BUSANDA ☐ BUSHIPS ☐ USMC☐ AIR FORCE

OTHER

18. REMARKS

Section 1

Section 2

SECTION 3: INTEREST IN PLANT OR ANIMAL

Section 4

Section 5

Section 6

Section 7

Section 8

Section 9

Section 10

Section 11

Section 12

Section 13

Section 14

Section 15

Section 16

Section 17

Section 18

Section 19

MARKS—CONTINUED

DISCONTINUED

1. The first step in the process of discontinuing a contract is to determine the reason for discontinuation. This may be due to a change in requirements, a change in the contract terms, or a change in the contract status. Once the reason is determined, the next step is to notify the contractor of the discontinuation. This should be done in writing, and should include the reason for discontinuation and the effective date of discontinuation. The contractor should be given a reasonable period of time to complete any outstanding work. Finally, the contract should be formally discontinued, and the contractor should be paid for any work completed.

2. The second step in the process of discontinuing a contract is to determine the impact of the discontinuation. This may include the impact on the contractor's business, the impact on the government's operations, and the impact on the public. Once the impact is determined, the next step is to develop a plan to mitigate the impact. This may include providing the contractor with a transition plan, providing the government with a replacement contractor, and providing the public with information about the discontinuation. Finally, the plan should be implemented, and the impact should be monitored.

DISCONTINUED

DISCONTINUED

DISCONTINUED

3. The third step in the process of discontinuing a contract is to determine the cost of the discontinuation. This may include the cost of the contractor's work, the cost of the government's operations, and the cost of the public. Once the cost is determined, the next step is to develop a plan to pay the cost. This may include providing the contractor with a payment plan, providing the government with a replacement contractor, and providing the public with information about the cost. Finally, the plan should be implemented, and the cost should be monitored.

4. The fourth step in the process of discontinuing a contract is to determine the legal implications of the discontinuation. This may include the impact on the contractor's legal rights, the impact on the government's legal obligations, and the impact on the public's legal rights. Once the legal implications are determined, the next step is to develop a plan to address the legal implications. This may include providing the contractor with a legal opinion, providing the government with a legal opinion, and providing the public with information about the legal implications. Finally, the plan should be implemented, and the legal implications should be monitored.

19. COMPANY OFFICIAL TO CONTACT FOR PROCUREMENT PLANNING		
NAME	TITLE	ADDRESS
20. COMPANY OFFICIAL INTERVIEWED		
NAME	TITLE	ADDRESS
21. SURVEYED BY		
NAME (Type)	TITLE	OFFICE
SIGNATURE		DATE SURVEYED

idents, operating vice presidents, or general managers. The program must be carried on at the top levels of management where decisions can be made and tentative commitments made. There appears to be generally a spirit of complete co-operation and genuine interest in the industrial mobilization planning.

To obtain the necessary information, the industrial specialist in this case contacted the general manager of the plant. After being introduced as to the purpose of the visit and the goals of industrial mobilization planning, the general manager deemed it necessary to call in his production manager, his controller, and the plant engineer to supply detailed information.

5. The Interview

In an informal, conversational manner, the industrial specialist determined what products the concern was then producing and in what volume, what other products the firm could produce and in what volume, and what products the firm produced during the war and in what volume.

From an analysis of the company's present equipment, the specialist discovered that the company's peacetime production was limited to a specialized type of rug and that the only wartime products which it could produce at that time were two very special grades of duck.

A further investigation showed that it took the company from one to six months to convert their looms to

wartime production in the last war.

The conversation lead to bottlenecks encountered during the last war as well as particular labor difficulties encountered. Although no serious difficulties were encountered, the operators of the looms making rugs were not able to cope with the increased tempo of operations when their looms were converted to the making of duck. The nervous strain and deterioration of the quality of their work necessitated training new workers to perform this task. However, the locality supplied sufficient labor of the required skills.

The company provided the investigator with a detailed analysis of personnel, classifying them by the following groups: Administrative and Managerial, Engineering, Clerical and Sales, Service and Maintenance, Production and Manufacturing. These groups were classified according to the present and maximum forces and according to Total and Male employees. The production group was broken down into Skilled, Semi-skilled, and Unskilled.

A vital part of a survey is an evaluation of the company's plant and equipment. The investigator listed all of the important equipment and machinery with sufficient attention to classification so that the potential products could be positively determined. A record was also made of the acreage then occupied and available for expansion, as well as the floor area then occupied and available for

expansion. Storage area in square feet, both indoor and outdoor (covered and uncovered), was recorded, and the environment of the location - city or suburban - was noted.

Discussing his relationships with the government during the last war, the general manager stated that his experience was very favorable and all dealings were satisfactory. At that time the company was not engaged in research or development work for the government.

Analyzing the security measures which the plant had taken, the specialist discovered that the plant had a guard force, an iron fence enclosing the plant, and an alarm system. For fire protection the company had an automatic sprinkler system coupled with an alarm system.

Since transportation is vitally important to a company's war time operations, the adequacy of the transportation facilities is considered in a survey. The capacity of the railroad siding was recorded with the distance to the nearest other rail loading point. The distance to the nearest cargo airport was also noted because emergency shipments of both finished goods and raw materials may be made by air. The highway network was evaluated and loading facilities for trucks described. The transportation for personnel is just as important as transportation for materials, so record was made of the adequacy of public transportation as well as the percentage of employees depending on public transportation.

The housing facilities and community services were mentioned in the conversation. In these times, housing is a pressing problem in all industrial centers, so housing had to be classified as inadequate. Community facilities, such as: schools, restaurants, shopping districts, and service establishments were considered adequate.

Power and fuel will be critical in any future emergency, so it is necessary to consider these two factors as they consider each individual firm producing for the armed forces. This particular company was using electric power, which it generated from coal.. The steam also provided heat for the plant and power for the process.

The capacity of the tool department to produce the necessary tools, dies, jigs, and fixtures for the present products was considered and found to be adequate.

Finally, the attention of the meeting was focused on the question of the normal work week. It was decided that a forty-eight hour week was normal, so all planning will be based on a forty-eight hour week. Twenty-four hours a week will be allowed for civilian production, while twenty-four hours plus all additional hours worked will be allocated to wartime production for the purposes of industrial mobilization planning.

6. Use of the Information

Armed with the information obtained in this survey, the Quartermaster Corps can now see how this particular firm

fits into its plans for industrial mobilization planning. Knowing how much duck cloth of what type this firm can produce in case of emergency, the Quartermaster Corps is in a position to request allocation of a definite amount of the firm's productive capacity, assuming no other claimant and assuming that the plant is allocated to the Quartermaster Corps entirely. Since the plant does not subcontract any of its work, planning can be limited to this firm and its suppliers.

Of course, the amount of information and the detail requested depends on the product under consideration, the type of plant, and the amount of conversion necessary. Obviously, it would take a much greater amount of planning to prepare schedules for the production of jet engines than it would to plan for the production of shoe lacings for service shoes. The guide is the production schedule, and only those facts needed to support production estimates should be reported.

CHAPTER V

REQUEST FOR ALLOCATION OF PRODUCTION CAPACITY AND TENTATIVE SCHEDULE OF PRODUCTION

1. Form 101

The next step in the sequence of allocating productive capacity is the request for the allocation of productive capacity on Munitions Board Form 101 (see Exhibit IV), which is completed and forwarded to the Munitions Board.

2. Data Required

The name of the plant, its location, its parent company, its financial rating, the usual number of employees, the usual products manufactured with the United States Government classification numbers, the quantity or value of usual products manufactured - all of this information may be taken from the data listed on the survey form.

In addition, the items for which capacity is requested are listed, with classification numbers, in the quantity desired during the first two years of mobilization. The months required to supply this amount are estimated, and a detailed record made of any retooling necessary.

For the purposes of mobilization planning it is necessary to estimate the capacity available for civilian production and for the production of other wartime products after the need described has been met.

The form has provisions for clearance by various agencies and approval by several officials, and it is sent

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EXHIBIT IV
REQUEST FOR ALLOCATION OF PRODUCTIVE CAPACITY

Form 101—MUNITIONS BOARD
NATIONAL MILITARY ESTABLISHMENT

Part 2: Copy for Military Department

SERVICE OR BUREAU REQUEST NO.

REQUEST FOR ALLOCATION OF PRODUCTION CAPACITY

1. NAME OF PLANT DESIRED AND LOCATION					2. DIVISION OR SUBSIDIARY OF:				
3. FINANCIAL RATING (THOMAS)	4. EMPLOYEES	TOTAL	FEMALE	MALE	PERCENT MALE SKILLED				
5. USUAL PRODUCTS MANUFACTURED:					6. SCC NO. (4 DGTS.)		7. QUANTITY OR VALUE OF USUAL PRODUCTS (MONTHLY OR YEARLY—SPECIFY)		
ITEMS FOR WHICH CAPACITY IS REQUESTED (8)	SCC NO. (4 DIGITS) (9)	UNIT (10)	QUANTITY DESIRED (FIRST 2 YEARS MOBILIZATION) (11)	MOS. RQD. TO SUPPLY QNTY. DSRD. (12)	CAPACITY REMAINING FOR PRODUCTION OF—		DATE TENTA- TIVE SCHDL. PRODUCTION ACCEPTED (14)	ESTIMATED VALUE PRODUCTS UNDER ALLOCATION (15)	
					USUAL PRODUCTS (13A)	OTHER PRODUCTS (13B)			
16. CLEARANCE FOR PLANT BY:			17. CAPACITY CLAIMANT:			18. CONCURRENCE BY ASPPO:			
DATE:			DATE:			DATE:			
19. CONCURRENCE FOR SERVICE OR BUREAU CHIEF:			20. APPROVED FOR MILITARY DEPT.:			21. APPROVED FOR MB:			
DATE:			DATE:			DATE:			
22. PLANT				23. ADDRESS				24. MB FACILITY INDEX NO.	

↑ START TYPING HERE JUST ABOVE LINE OF PERFORATION. AFTER TYPING ON BOTTOM LINE HAS BEEN COMPLETED, DETACH THIS TAB.

ENTER NAME OF FACILITY ACCORDING TO METHOD USED IN TELEPHONE DIRECTORIES. FOR LOCATION OF PLANT, SHOW CITY AND STATE IN WHICH PLANT TO PRODUCE ITEMS DESIRED IS LOCATED. IF ANY SPACE ABOVE IS NOT SUFFICIENT, ENTER ASTERISK (*) IN THAT SPACE AND CONTINUE ON REVERSE SIDE OF FORM.

IMPORTANT.—INSTRUCTIONS CONTAINED IN SECTION IX, ANNEX NO. 47, ALLOCATION OF PRIVATE INDUSTRIAL CAPACITY FOR PROCUREMENT PLANNING OF THE ARMED SERVICES, SHOULD BE FOLLOWED FOR THE COMPLETION OF THIS FORM.

to the Munitions Board for consideration.

3. Tentative Schedule of Production-

The "Ghost Order"

If the allocation of production is approved by the Munitions Board, the board prepares Form 103, a Tentative Schedule of Production (see Exhibit V) and forwards this document to the plant management.

This schedule is not a binding order, but rather a voluntary statement on the part of the firm that it believes that it can manufacture the products listed on the schedule and can produce them in the time and volume needed.

4. Action by the Plant

It will be necessary for the firm to study carefully its processes and conversion problems before deciding that the schedule is reasonable and capable of attainment. The firm must also list all subcontractors and component parts manufacturers necessary to meet the proposed schedule. Subcontractors and component parts manufacturers should be listed by name and address together with the products and quantities required from them.

The firm is also requested to analyze the labor force needed to meet the proposed schedule of production and list the present force by shift and sex.

A study must be made to determine all raw materials and/or basic processed material needed to meet both military and civilian needs during an emergency and in what volume

NATIONAL MILITARY ESTABLISHMENT

Department of the _____

FROM: _____ (Procuring agency (technical service or bureau)) (Address) (Date)

SUBJECT: Tentative Schedule of Production.

TO: _____ (Name of facility) (Address)

GENTLEMEN:

1. In planning the mobilization of industry in war, an analysis of the manufacturing capabilities of your facility, as made jointly by members of your staff and a representative of this office, indicates that in an emergency your company could deliver, along with other articles of matériel that may be tentatively scheduled for production for the Government, the item (s) listed on the accompanying schedule at the rate indicated.

2. If you agree that the accompanying production schedule can be met, taking into account all other items for which capacity in the plant involved has been allocated, it is requested that you verify the estimate by signature, subject to the understanding contained in the following acceptance schedule. It is also requested that the information called for in parts II and III of the Tentative Schedule of Production be supplied in order that comprehensive mobilization plans can be made, and the resources and subcontract sources of supply required to sustain your production may be taken into consideration and plans made therefor.

SIGNED:

MB FORM 103
1 JAN 48

16-54705-1

Page 1

ACCEPTANCE BY PLANT OFFICIAL

(a) Our signature hereto indicates that this firm believes it is qualified to produce the article(s) indicated, that the tentative schedule is reasonably possible of attainment, and that in the event of mobilization it is willing to enter into a satisfactory contract with the proper authority, for manufacture of the article(s). It is understood that our acceptance of this Tentative Schedule of Production is entirely voluntary on our part, and that it in no way binds this firm or the Government in any contractual relationship.

(b) Remarks. (Use separate sheet.)

(c) Our acceptance of the following Tentative Schedule of Production terminates automatically on _____, after which date it will have no force or effect unless renewed by specific agreement.

Date _____ By _____ (Plant official)
(Official capacity (title))

Part 5: COPY FOR CPPO

II. SUBCONTRACTORS AND COMPONENT PARTS MANUFACTURERS REQUIRED

utilized beyond the first tier, please include these on the list, noting, by means of indentation or otherwise, the subcontract relationship, i. e., to what first tier subcontractor the second tier subcontractor will supply material.

[illegible]

1 Standard Commodity Classification. 16-54705-1

III. RESOURCE REQUIREMENTS AND PRODUCTION CAPABILITIES

Taking into account all items of matériel, including those listed herein, that you have tentatively agreed to produce in the event of mobilization, please estimate as carefully as possible the following resources that will be required to meet production schedules. If you are not a metal fabricator, assume that your production for civilian markets will not be reduced to a point below 50 percent of current one-shift output. If you are a metal fabricator, assume that your production for civilian

markets will be continued at the rate applicable to your industry as specified in Appendix II of Annex No. 47, *Allocation of Private Industrial Capacity for Procurement Planning of the Armed Services*. For your industry that rate is ----- percent of the value of total wartime production. (*The planning agency should supply the foregoing percentage.*)

A.	EMPLOYEES	NUMBER PRESENTLY EMPLOYED, BY SHIFTS			MOBILIZATION REQUIREMENTS, BY SHIFTS		
		1ST	2D	3D	1ST	2D	3D
MALE							
TOTAL, INCLUDING FEMALE							

B. RAW MATERIALS AND/OR BASIC PROCESSED MATERIALS (*List kinds and estimated quantity required to meet mobilization schedule(s) agreed to, plus assumed output for civilian markets.*)

C. MACHINE TOOLS AND OTHER INDUSTRIAL EQUIPMENT (*If additional equipment is required, list types, by name and Standard Commodity Classification number, and quantity that would be needed to meet mobilization schedule(s) agreed to, plus assumed output for civilian markets.*)

D. TOTAL PRODUCTION CAPABILITIES

1. Based on an estimate of your plant's current maximum production potential (*capacity to manufacture on three-shift bases without plant expansion*), would the item(s) of matériel that you have agreed to produce in the event of mobilization plus the assumed output for civilian markets utilize the maximum manufacturing capabilities of your plant? ☐ Yes ☐ No
2. If your answer is "No," indicate below type(s) of manufacturing capacity that would not be utilized to the fullest extent on the basis of present planning; for example, steel forging, aluminum-alloy casting, sheet-metal working, manufacturing or processing rubber goods, electrical equipment, leather goods, textiles, raw materials, etc., or if the entire plant could be utilized by the addition of extra employee shift(s), so indicate.

NOTE: The data entered in this column should be cumulative, i.e., it should show the total amount of work done up to the date of the report.

they will be needed. This data is, of course, an essential part of the planning for industrial mobilization. This information will assist in channelling material in time of stress.

Machine tools and other equipment needed to meet civilian and military needs must also be determined and recorded. In addition, the unused productive capacity together with the maximum production potential without plant expansion must be determined in order to achieve maximum effectiveness in allocation of capacity and to permit fullest utilization of present capacity.

To assist management in this detailed and difficult phase of planning, the form 103 gives a time schedule of production from "M Day". It breaks the quantities required for the first year down into quarters and the quantities for the second year into halves, with a total for the two years.

5. Legal Aspects of Schedule

When management decides that the schedule is reasonable, they agree not to enter a binding contract, but rather they agree that they are willing to enter into a satisfactory contract with the proper authority for the manufacture of the articles in the event of mobilization. The tentative agreement terminates automatically on a predetermined date, after which date it will have no force unless specifically renewed by mutual agreement. This date

1. The first part of the paper discusses the importance of understanding the cultural context of the research. It emphasizes that researchers must be aware of the values, beliefs, and customs of the community they are studying. This is particularly important in cross-cultural research, where differences in communication styles and social norms can lead to misunderstandings.

2. The second part of the paper focuses on the methodology used in the study. It describes the sampling process, the data collection methods, and the analytical techniques employed. The authors argue that a mixed-methods approach, combining both qualitative and quantitative data, provides a more comprehensive understanding of the research topic.

3. The third part of the paper presents the findings of the study. It discusses the results of the data analysis and highlights the key themes that emerged from the research. The authors note that the findings are consistent with previous research in the field, but also identify some new insights that challenge existing theories.

4. The final part of the paper discusses the implications of the study for future research and practice. It suggests that the findings have important implications for understanding the cultural context of the research and for developing more effective research methods. The authors also discuss the potential applications of the findings in various fields, such as education, healthcare, and social work.

is usually twelve months from the date of issue, depending entirely on the type of product, its obsolescence rate, and the nature of the industry. This provision for automatic lapse insures the periodic revision that is necessary for an effective program.

At this point it is worthwhile to note how completely the whole program depends on the voluntary co-operation of industry. Without this vital co-operation the whole program would be faced with almost insurmountable obstacles. It is obvious that the government does little more than point the way to industry by carrying out the top level planning and evaluating the probable demands of any future conflict. Basically the industrial mobilization planning program is industry's program.

CHAPTER VI

MANPOWER

1. Demands of Modern War

As has been stated before, modern war means total war, affecting and making demands on all segments of our economy. Victory has come to depend not only on the leadership and strategy of our military commanders and the caliber of the men fighting under them, but also on the diligence, the patriotism, the stamina, and the will to work of the men and women on the home front.

Looking back into history, we may see that war used to mean nothing more than sending out a small band of armed men to grapple with the enemy while the rest of the citizens carried on their usual activities in the customary manner. Today, however, modern warfare strains the warring nations to the limit, and in some cases beyond the limit, of endurance.

Mobilization planning must face the manpower problems squarely as one of its most important tasks. The dynamic character of the problem makes it an unusually difficult one.

Technological changes in industrial processes and methods as well as scientific strides in war weapons - both will necessitate a constant reappraisal of manpower requirements. This reappraisal must consider not only the changes in numbers of men, but also changes in methods of recruiting

THE

REPORT

OF THE

COMMISSIONERS OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION OF THE HOUSE OF COMMONS

PASSED IN MAY 1871

AND IN ANSWER TO A RESOLUTION OF THE HOUSE OF COMMONS

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and training men.

Basically the question is one of deciding how many men can be put into the Armed Forces and adequately supplied without reducing the civilian economy and the home front war effort to the danger point of ineffectiveness.

The problem embraces questions of methods of recruiting men and women for military and industrial service, controls to make the plans effective, means to make manpower most effective and hold workers in essential jobs, and an organization capable of administering the work.

2. High Employment Today

We are now in a period of high employment with a resulting shortage of available labor. Although full employment is desirable for a peacetime economy, such a condition poses many knotty problems for mobilization planning.

Before World War II, sixteen percent of the labor force was unemployed¹, but as of December, 1948, only about two percent of the labor force was not employed². Before World War II, all basic industries were far below capacity, but today all basic industries are close to their peaks. For example, comparing the steel, petroleum, cement, and electricity industries, we find the following results:

1. "What's Ahead for Industry If the Cold War Warms Up", Factory Management, July, 1948, p 66-71
2. "Current Labor Statistics", Monthly Labor Review, February, 1949, p 223

<u>PERCENT BELOW CAPACITY</u> <u>BEFORE WORLD WAR II</u> ¹		<u>PERCENT BELOW CAPACITY</u> <u>DURING JULY, 1948</u> ¹	
Steel	34%		7%
Petroleum	21%		0%
Cement	46%		13%
Electricity	33%		2%

A reservoir of unemployed, as existed in 1939 and 1940, provides a cushion which absorbs much of the initial impact of manpower mobilization efforts. If unemployment were at a low point at the beginning of a war, a manpower shortage would develop at the very outset, and immediate controls would be necessary. We are now in such a dangerous period from the standpoint of mobilization demands.

3. Manpower Requirements in Future War

It has been estimated that the United States will need seventy-five million men and women to carry the burden of any future war.² This seventy-five million will consist of fifteen million in uniform and sixty million in a tightly controlled labor force - the entire organization to be held together to fight a war lasting five years.²

Such demands on our limited population would result in an acute manpower shortage under any conditions and would far exceed the capacities of those men of military age.

1. "What's Ahead for Industry if the Cold War Warms Up", Factory Management, July, 1948, p 66-71.
2. R. M. Dobie, "We'd All Be Drafted for World War III", Boston Sunday Herald, Magazine Section, October 31, 1948, p 4-48

We might very well be faced with the possibility of being forced to find definite assignments for all who can make a contribution to the war effort whether they be women, old men, or even boys and girls.¹

We would probably be required to give our government the power to assign all able bodied citizens from the ages of eighteen to sixty-five to civilian employment regardless of their individual desires (with the exception of mothers of small children and the inmates of institutions) as well as the power to allocate men between industry and the Armed Forces, allocating civilian workers where they will be most effective.

There are those who feel that technological developments and scientific conquests have reduced man's place in warfare to that of a bystander or a push-button technician, but the cruel fact is that every radically new weapon in history has increased the size of armies.

4. Need For Controls

It would be sheer waste to allow skilled men to enlist at will in the Armed Forces, and it would be folly to allow specially trained workers to shift around from industry to industry. Helter skelter enlistment can transform a highly skilled mechanic, who is producing vital war

1. "Henry Cabot Lodge on Total War", Boston Sunday Herald, October 31, 1948.

products in a period of labor scarcity, into an infantry private whose highly developed skill is being lost digging a foxhole and aiming a rifle.

Not only on practical grounds should such controls be granted, but also on moral grounds. It is difficult to reconcile the power to force a man to serve in the Armed Forces and risk his life in any theater of operations with the government's lack of ability to require civilian workers to serve where they would be most effective. In the last war the government's power over civilian workers was in large part negative.

The importance of a supporting organization of supply to the man in the field has been pointed out many times. "The man behind the gun" has been glamorized by wartime propaganda, and his place in the business of waging war has been rightly emphasized.

Mr. William Knudsen, later General Knudsen, pointed out that one man in the field requires the backing of ten men at home.¹ Other estimates have gone as high as seventeen men at home to every one man in combat.²

5. Experiences in Two World Wars

World War II was not a total war for the United

1. Address before the Military Order, Veterans of Foreign Wars, New York City, April 5, 1941.
2. Henry William Spreigel, The Economics of Total War (New York, D. Appleton-Century Co., Inc., 1942), p 66

States, but rather made only relatively moderate demands on our economy. At the peak of the war effort in 1944, only 45% of the total labor force of the country served in the Armed Forces or in war industries.¹ Many luxury goods were manufactured, and only partial controls were exercised.

Germany and England were faced with manpower problems which more nearly approach the probable difficulties which might plague us in any future emergency. Both of these countries found it necessary to employ dictatorial methods of control in utilizing their manpower.

In May, 1940, Great Britain authorized the Minister of Labor to conscript labor and authorized him to "direct any person in the United Kingdom to perform such services in the United Kingdom...which that person is, in the opinion of the Minister, capable of performing."²

Germany had conscripted labor in 1939, long before the outbreak of war. The authorities, under the powers granted, could require the services of any resident from the ages of fifteen to seventy years.²

The United States, however, had a voluntary labor force drawn only by motives of patriotism or inducements of

1. R. Magruder Dobie, "We'd All Be Drafted in World War III", Boston Sunday Herald, Magazine Section, October 31, 1948, p 4-48.
2. Henry William Spiegel, The Economics of Total War (D. Appleton-Century Co., Inc., 1942) p 153-157.

a material sort. Absenteeism, a high turnover rate, and high labor costs generally result from such a loose system.

Looking at our experiences in two world wars, we can see the results of lack of planning on the vital problem of mobilization.

The entire mobilization program of World War I was pure improvisation and a piece-meal patchwork affair that merely developed as the need arose. Instead of exercising effective control, the government, along with industry, labored under a maze of restrictions.

There was a strain on the labor force in World War I with a boom in going wage rates to attract the workers from one industry to another. Wage differentials were upset completely, so armies of workers, lured by high wages, made their way to distant industrial cities. The large numbers of men and women overtaxed all of the facilities of the crowded sections of large cities. The conspicuous results of the migration were poor housing, excessive labor turnover, and unusual labor shifting.

Looking at World War II, we see that men could abandon critical jobs in critical plants to enter the Armed Forces even though they were causing unreasonable inefficiency and gross waste by their actions. The labor controls that were imposed during World War II would be entirely ineffective in an all-out war. High wages and draft deferments for essential workers are questionable means for main-

taining a wartime work force.

6. The Problem

The problem is much more than one of facilitating the flow of workers from non-essential to essential work; it also involves keeping them on essential work in a manner which is most effective for our economy. Restrictions on mobility, as were employed in World War II, tend merely to maintain the status quo and encourage employers to keep workers for possible needs even when they are not able to make proper use of the services of all of the workers.

We must devise means whereby excessive turnover and shifting can be eliminated and procedures for assigning men where they will make their most valuable contribution to the war effort. We must give careful attention to maintaining the efficiency of labor and improving workers' morale. An active psychological campaign must be planned to maintain the spirits of the working force, and plans must be formulated for removing basic causes of unrest, such as: inadequate housing, inadequate transportation facilities, and lack of uniform wage scales. Finally, we must devise means for effectively adjusting disputes and settling grievances.

7. Labor Reserves

Our labor reserves at the moment are not limitless as some wishful thinkers might imagine, but rather

they are very definitely in short supply compared to the demands of an all out war.

Our reserves consist of the unemployed, the submarginally employed, those persons who would not ordinarily accept employment, women, prisoners of war (after the war's beginning), the young, the aged, and foreign labor.¹

As of December, 1948, our reservoir of unemployed was at an abnormally low figure of 1,941,000², so this source does not provide a satisfactory reserve in the immediate future at least.

It appears that the submarginally employed offer the largest source of potential workers for the war effort. This source can be made available through the application of proper policies. For example, it has been estimated that 5,000,000 men, low income single crop farmers, could be drawn into industry from the land without sacrificing much agricultural production because too many people are trying to make an income from growing cotton and tobacco.¹

Women, children, and the aged constitute fifty percent of our population, so they offer a very important potential source of manpower. Industrial engineers have here a challenging task in the service of their country of

1. Henry William Spreigel, The Economics of Total War, (New York, D. Appelton-Century Co., Inc., 1942), p 69-75.
2. "Current Labor Statistics", Monthly Labor Review, February, 1948, p 223.

providing occupations for those of this group who are available for work and are physically capable. Technological advances, improved processes, and improved machinery can provide jobs which are safe, easy to learn, pleasant, and which do not require physical effort or strength.

Efforts should be directed toward developing more and more labor saving devices in order to stretch our limited supply of manpower. Science and research can make an extremely important contribution to the war effort by working along these lines now before their skills are directed toward developing destructive forces in the heat of battle.

Closely related to manpower problems are economic controls necessary to maintain a stable economy. Public policies in wartime are usually designed to stabilize wages, but stabilizing wages is tied up with the stabilization of the cost of living and the necessary controls.

Finally, it should be acknowledged that increased hours of work and increased effort can increase the productivity of our working force up to a point, but this means should be employed only as a temporary expedient or an emergency measure.

CHAPTER VII

MATERIALS

1. The United States - A Have Not Nation

It is almost trite to say that a war production program is necessarily dependent on the smooth flow of materials to wartime manufacturers; however, it is essential to dispel the myth of the self-sufficiency of the United States. The United States is not self-sufficient for either peace or war.

Two major wars in the past thirty years have cut rather heavily into our supply of raw materials, and we are rapidly becoming a have-not nation in respect to many natural resources, and we have become dependent on countries all over the world.

2. Favorable Aspects of Our Position

Looking at the favorable side of the problem, it is true that the United States is better supplied with the basic raw materials necessary for waging war than is any other country. Our agricultural production is able to supply the country with ample supplies of foodstuffs to wage a war with the exception of coffee, spices, and certain tropical fruit.¹

Our country possesses ample supplies of cotton,

1. Allan Nevins and Louis M. Hacker, The United States and Its Place in World Affairs (Boston, D. C. Heath and Co., 1943), p 535-548.

THE
REPORT

OF THE
COMMISSIONERS OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION OF THE HOUSE OF COMMONS
PASSED ON THE 12TH MARCH 1881
RELATIVE TO THE LANDS BELONGING TO THE
CROWN AND TO THE SEVERAL DEPARTMENTS OF THE
GOVERNMENT

IN THE YEAR 1880
LONDON: PRINTED BY THE STATIONER GENERAL
AND SOLD BY THE PRINCIPAL BOOKSELLERS
IN THE UNITED KINGDOM
1881

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THE COMMISSIONERS OF THE LAND OFFICE
H. J. JACKSON, SECRETARY

more than one-half of the world's known coal reserves, the greater part of the North American iron ore deposits, which comprise forty percent of the world's total, and it produces more than one-half of the world's petroleum.¹ The United States also has ready access to large deposits of copper, lead, zinc, bauxite, and many other important materials.¹

3. Proper Perspective

In spite of our reputed self-sufficiency, many of our basic materials would be in short supply in any future crisis. Petroleum, copper, rubber, and even steel and aluminum would be needed in quantities far beyond the existing capacity of industry to supply. Imports are even now becoming more and more important because of increasing demand resulting from the present high level of business activity.

4. The Dependency of the United States for Essential Materials²

The materials discussed in the following section are those regarded as essential to our economy and our industrial life.

1. Allan Nevins and Louis M. Hacker, The United States and Its Place in World Affairs (Boston, D. C. Heath and Co., 1943), p 535-548.
2. Taken from undated pamphlet by Industrial College of the Armed Forces, Appendix A - Charts and Maps, and lecture on Critical and Strategic Materials, presented at Economic Mobilization Course at Harvard University, Cambridge, Massachusetts, on November 15, 1948.

In the year 1944 the United States was entirely self-sufficient in its supply of coal, iron ore, magnesium, molybdenum, petroleum, phosphates, fluorspar, potash, sulphur, zinc, beef, dairy products, pork, textile fibers, fats, oils, and wheat. The United States is at least partially dependent on outside sources for antimony, asbestos, bauxite, chromite, copper, graphite, industrial diamonds, lead, manganese ore, mercury, mica splittings, nickel, platinum, quartz crystals, tin, tungsten, vanadium, hard fibers, sugar, hides, and rubber.

The mere statement that we were dependent on outside sources for certain materials is meaningless unless we consider how far away those sources are and how heavily we depend on them. Taking the year 1943 as an example, let us consider how vulnerable we are in this respect.

In the year 1943 we imported roughly the following percentages of our requirements:

ANTIMONY: 55% from Bolivia, Mexico, and Peru.

ASBESTOS: 98% from Canada (85%) and South Africa (15%).

BAUXITE, High Grade,: 22% from Surinam and British Guiana.

CADMIUM: 1% from Belgium Congo and Peru.

COPPER: 30% from Chile, Mexico, Peru, Canada, Yugoslavia, and others.

INDUSTRIAL DIAMONDS: 100% from South Africa, Belgium Congo, the United Kingdom, and Brazil (20%).

GRAPHITE: 75% from Mexico, Madagascar, and others.

KYANITE: 50% from India.

LEAD: 30% from Mexico, Australia, Peru, Africa, Newfoundland, Canada, and others.

MANGANESE: 85% from India, Brazil, the Gold Coast, Cuba, South Africa, Mexico, and others.

MANILA: 100% from Costa Rica, Canal Zone, Panama, Guatemala, and Honduras.

MERCURY: 50% from Mexico, Canada, Brazil, and others.

MICA: 25% from India, Canada, Brazil, and others.

NICKEL: 80% from Canada (72%), New Caledonia, and Africa.

PEPPER: 100% from Mexico.

PETROLEUM: 5% from the Netherlands, East Indies, Venezuela, Columbia, Mexico, and others.

PLATINUM: 75% from Canada, USSR, Columbia, and the United Kingdom.

QUARTZ CRYSTALS: 99% from Brazil.

RUBBER: 15% from Ceylon, Liberia, Brazil, Mexico, Ecuador, the United Kingdom, Nicaragua, and others.

SHELLAC: 100% from India.

SUGAR: 70% from Cuba, Hawaii, Puerto Rica, and others.

TANTALITE: 98% from Brazil, Belgian Congo, Rhodesia, Australia, and others.

TIN: 55% from Bolivia, Belgian Congo, and others.

TUNG OIL: 2% from Brazil.

TUNGSTEN: 65% from China, Bolivia, Argentina, Brazil, and others.

VANADIUM: 25% from Peru, South Africa, and others.

WOOL: 55% from Australia, Argentina, Uruguay, South Africa, New Zealand, and others.

ZINC: 40% from Mexico, Australia, Canada, Argentina, Newfoundland, Peru, Belgian Congo, and Chile.

Although these figures are not absolutely correct because they were estimated from bar charts, they do serve a useful purpose of showing our dependency for vital raw materials. The percentages show how much of each material we require over and above domestic production plus domestic secondary recovery. It is significant to note also that the figures are representative of a wartime economy and do not represent peacetime conditions. The year 1943 was chosen because the United States had then presumably cultivated all domestic and nearby sources.

We depend rather heavily on outside sources for manganese, a vital and irreplaceable element needed in the manufacture of steel, for tin, which is needed to manufacture bearings, for rubber, which is needed for vehicles and aircraft, and even for bauxite, the source of aluminum.

All of the domestic tin in 1943 was reclaimed, and our present efforts to manufacture tin are wholly experimental - the total supply being sufficient for less than one month's demand.

Likewise, in 1943 most of the domestic antimony, nickel, platinum, and rubber was reclaimed; as was one-half of the domestic lead and much of the domestic zinc and copper.

5. Classification of Materials¹

Materials are usually classified as essential, critical, and strategic with substantially the same meanings assigned to each of the classifications regardless of what source defines them.

Essential materials are those materials which are ordinarily available from domestic sources in ample supply for peacetime needs. However, wartime needs for these materials might exceed supply and put them in the critical or strategic category.

Critical materials are those which are essential for a defense or war economy, but the procurement of which would be somewhat less difficult than the procurement of strategic materials either because they are less essential or because they are available in greater quantity from domestic sources. Some degree of conservation and some degree of control over the distribution of these materials would be needed. Aluminum, asbestos, cork, hides, wool, and optical glass are typical examples of this category.

1. Harold J. Tobin and Percy W. Bidwell, Mobilizing Civilian America (New York, Council on Foreign Relations, 1940) p192-222.

1870
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and the second was also very successful
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Strategic materials are those which are essential to a defense or wartime economy and which are obtainable, for the most part, from sources outside the continental limits of the United States. Strict conservation and rigid control over distribution would be necessary. Typical examples of this classification are rubber, silk, tin, tungsten, chromium, and mica.

6. Plans of Action

There are only four possible plans of action to insure adequate supplies of necessary materials.

First of all, it might be desirable to find alternative sources of supply which are less vulnerable to enemy attack even though they might be more costly sources.

Secondly, it might be possible to develop or stimulate domestic production.

Thirdly, it might be possible to discover substitute materials.

Finally, timely action to build up a stockpile of materials might be necessary with strict conservation measures exercised.

a. Alternative Sources

The vulnerability of supply routes is an important factor to be considered in the supply of many of our strategic materials. In peacetime, over half of the mercury used in this country comes from Italy and Spain. Chrome ore is imported from Africa. Most of our antimony, rubber,

tin, tungsten, and manila fiber, as well as practically all of our silk, and quinine come from the Far East.

The figures quoted as of 1943, showing the dependency of the United States for certain materials reflected a shift to safer sources wherever possible. In general, the Western Hemisphere is considered a safer source for strategic materials than the Far East, Europe, or Africa.

For example, the low grade tin produced by Bolivia and the rubber produced by Brazil might be substituted to some extent for the higher quality products of Malaysia. Brazil and Cuba produce a ferromanganese ore which might replace part of the supply now obtained from Russia and India. Cuba is a more certain source of chrome ore than is British Africa.

Nickel is in a class by itself because although domestic primary production accounts for less than 5% of our needs, most of our nickel comes from Canada, an almost certain source.

b. Stimulating Domestic Production

Every effort should be directed at developing the domestic production of manganese, chrome, tungsten, dye-stuffs, by-products of coal, and all such raw materials usually imported but which can be produced in quantity in this country. Synthetic rubber can be utilized in peacetime, and the industry should be assisted by the government if necessary to insure the preservation of this wartime art.

The use of long range contracts or government subsidies would assist in stimulating production of these materials.

Domestic substitutes should be discovered for as many materials obtained abroad as possible, and every effort made to utilize these substitutes in a peacetime economy.

c. Stockpiling¹

The objective of our stockpiling program is to provide a stock of 67 strategic materials sufficient for caring for the needs of a major war. The date set for the completion of the program is 1951, but the progress in the past makes the achievement of this goal seem very doubtful.

As has been stated earlier, the Munitions Board is charged with the responsibility of stockpiling materials to the value of \$3.154 billion in five years. Let us now consider how this goal compares with our accomplishments as of April, 1948.

1951 Goal: Stockpile of critical materials worth	\$3,154,000,000.
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Less: Value of items on hand from war stockpile	81,000,000.
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1. From "Build the Stockpile Now for National Security", Factory Management, April, 1948, pp 50-55. Also "What Are We Doing Now about National Security?", Factory Management, March, 1948, pp 66-73.

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Less: Value of surplus property acquisitions to be worth	\$ <u>316,000,000.</u>
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Total to be purchased over five year period	\$ <u>2,757,000,000.</u>
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With a total goal of \$2,757,000,000 worth of materials to be purchased, the Munitions Board must purchase \$550,000,000 annually to meet the goal. However, in 1947 and 1948 together, only \$278 million were appropriated for stockpiling. For 1949 \$435 million was requested, but as of April, 1948, the figure had been reduced to \$285 million.

One does not have to search very far to find statistics put forth to prove that our stockpiling program is well along and that we have acquired up to 25% of total requirements already. Such wishful thinkers are swayed by the initial effect of materials left over from the last war on the end goal.

The fact of the matter, as showed by the preceeding section, is that we are far behind our schedule of purchases. We have to step up progress, increase purchases, and remove certain restrictions hindering the program. One major impediment is the restriction that stockpilers may buy only what United States industry does not want of these scarce materials, and these amounts are too small. The restriction to year to year appropriations and to one year contracts also hampers any efforts to stimulate long-term mining developments.

We need a long-range program in all phases with sufficient authority in the hands of the responsible agency to get the job done. We should explore the possible utilization of marginal resources in the United States through government supported scientific research. Tax incentives might be offered to induce venture capital to undertake such ventures. Above all, we should increase appropriations and catch up on purchases.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation of the country and the progress of the work during the year, and the second section deals with the results of the work during the year.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

3. The third part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

CHAPTER VIII

EXAMPLE OF MATERIAL STUDY

1. Study of Ferrous Scrap

In order to better understand the type of approach used by the National Security Resources Board in attacking the broad problems facing it, let us consider a report submitted on July 1, 1948, by Mr. R. J. Wysor, special assistant to Mr. A. M. Hill, Chairman, on the subject of ferrous scrap.

In spite of the common opinion to the contrary, there exists in the United States an acute shortage of ferrous scrap, and this shortage seems to be growing worse. Since this scrap is essential for the production of steel and also in the iron foundry business, the shortage assumes special significance. This scrap is needed for production in the blast furnace, the Bessemer converter, the foundry hearth type furnace, the electric steel furnace, the foundry cupola, and above all in the open hearth steel furnace.

2. Causes of Shortage of Ferrous Scrap

The existing shortage has its roots in the past, having been caused by several factors. From 1933 to 1941, very heavy exports of scrap were made, aggregating about twenty-one million tons, roughly more than nine times as much as was exported in the preceeding nine year period.

From 1941 to 1945 approximately one hundred twenty-four million tons of iron or steel goods were

THE

PROCEEDINGS OF THE

ANNUAL MEETING OF THE

AMERICAN ASSOCIATION OF
PHYSIOLOGISTS
HELD AT THE UNIVERSITY OF CHICAGO
IN THE MONTH OF MAY, 1901
AT CHICAGO, ILL.

THE MEETING WAS OPENED BY
THE PRESIDENT, DR. J. H. COOPER,
ON MAY 1ST, AT 10 O'CLOCK A.M.
IN THE AUDITORIUM OF THE
UNIVERSITY OF CHICAGO.
THE FIRST SESSION WAS
HELD AT 2 P.M. IN THE
AUDITORIUM OF THE
UNIVERSITY OF CHICAGO.
THE SECOND SESSION WAS
HELD AT 8 P.M. IN THE
AUDITORIUM OF THE
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REPORT OF THE PRESIDENT

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shipped abroad in finished form, and the prospects of this metal returning to this country in any form are very remote.

Electric steel melting furnaces were aided in their expansion efforts during World War II so greatly that they quadrupled their capacity. These furnaces use one hundred percent scrap in the raw charge and use a very high quality scrap. Cupolas have also expanded their capacity in the past decade, creating greater and greater demands on a dwindling supply of scrap because they use a charge of two-thirds scrap.

On the other hand, the Bessemer process, a light user of scrap, has declined in importance, accounting for seventy percent of the United States steel production in 1900, but only five or six percent in 1948.

Another important factor in the growing scrap shortage is the turnover, that is the time it takes for a new product to find its way to the scrap heap. The turnover rate has been declining markedly. Immense bridges, office buildings with steel frames, and tunnel frames are examples of steel with a low turnover rate because of the indefinite life of such structures.

Even finished goods with quicker turnover rates will yield much less scrap than formerly because of the fact that goods manufactured during the shortage have been made with less steel, having the lowest practicable steel content. Then too, the installation of many strip mills

in the last two decades has made the steel scrap physically lighter.

With current scrap inventories lower than they have been at any time since records were started in 1939, mobilization planners have a real problem here. In the event of an emergency in the near future, this situation would be intensified because of the increased demand and because of the fact that many companies, during the retooling period, would be accumulating the raw material steel to fabricate but would not be producing scrap for the steel producers.

It is obvious that some sort of action is needed to rectify such a situation. We know that weapons of war in the past have been fashioned in large part from steel, and it is very likely that the same situation will hold true in any future conflict, at least in the immediate future.

3. Possible Courses of Action

We could import scrap steel from Germany since this country has large stocks of war-created scrap. This asset of our former enemy is being regarded with covetous eyes by the industrially minded Russians, and the loss of such a treasure would be a serious blow to the United States. Belgium and Luxembourg have scrap for exportation because of their large Bessemer production. It is significant to note that the Department of Commerce is currently working

on this problem to stimulate importation.

Reclamation of the scrap from the islands of the Pacific is worthy of consideration, but this source would be slow and costly to exploit. Our own country could be combed for possible sources, salvage operations intensified, and the wastes from oxidation in the processes could be reduced. Possibly the percent of scrap in the charge could be reduced, through research, in order to ease the demand for scrap.

Possibly one of the most important questions answered by Mr. Wysor's report is whether or not we should build up a strategic scrap stockpile, decentralizing its location near the large centers of steel production to be released in case of a national emergency. Other vital metals are being accumulated in this manner, and much could be said in favor of such a step. One might expect mobilization planners to heartily endorse such a program for national defense, extolling the virtues of playing safe and painting the dire consequences of an inadequate supply.

However, this report did not recommend building up a stockpile of ferrous scrap at this time. The cost, for one thing, would be a very sizeable amount. It would cost \$520,000,000 for a six month's supply, not including charges for handling, storage, carrying expenses, or depreciation.

The author of the report felt that one of our

greatest assets in meeting the demands of a situation such as this one is the genius, resourcefulness, initiative, and energy of the men in charge of our nation's affairs and industry. These men can cope with the unpredictable realities of life and could come up with the answer to any difficulties which might arise.

4. Recommendations

We should profit from our mistakes in the past and never again export such large amounts of scrap to the point of weakening our position and should attempt to relieve the demands on our scrap piles through scientific research. If any accumulation of scrap is to be made, it should wait until our current production of steel drops off from near capacity production to a more normal pace. At such a time scrap will be available, and the cost will be lower.

Mr. Wysor recommended conferring with industry on the problems of stockpiling, ferrous exports, the relationship among iron ore, pig iron, and scrap, as well as on any other problems which might arise.

5. Reasons for Considering This Study

This study has been considered to show the method of approach used by the National Security Resources Board in analyzing its problems. The men doing this work are not starry eyed idealists grasping for the ideal condition of absolute preparedness at all times. They realize the

difficulties of even defining the word "preparedness" and the even greater difficulties of attaining the goal. They are not control-minded men who believe in slapping absolute government controls on our economy to have everyone do what is right for the country, with right determined by the planners.

Industrial mobilization planning is being carried on by men who are conscious of the fact that the economy must continue its normal path and not be dammed up for the sake of a minor objective. They are men who are realistic and practical with mature judgement.

What is more, as was demonstrated by the recommendation that the National Security Resources Board confer with industrial leaders on the problems of ferrous scrap, these men realize the importance of private enterprise in this entire program and the value of the contribution that industry can make.

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CHAPTER IX

STRATEGIC RELOCATION¹

The National Security Act of 1947 charges the National Security Resources Board with "the strategic relocation of industries, services, government, and economic activities, the continuous operation of which is essential to the nation's security." This problem of relocation is a very difficult one to cope with, depending for its solution on both the government and industry.

1. Motives for Relocation

Industry should have two motives for dispersion of its facilities: the security of the nation and the very existence of industry. Industry and the government must work together as a team to arrive at a mutually satisfactory solution.

The civilian of today is often terrified by the possible weapons of large scale destruction and terror which might be used in any future struggle, but at the same time he is lulled into a feeling of security by our possession of an atomic bomb stockpile. Possible there is a middle ground of reality.

1. Taken from an article by the National Security Resources Board, National Security Factors in Industrial Location (Washington, D. C., U. S. Government Printing Office, September, 1948) and a release to morning papers, September 30, 1948, by the N. S. R. B.

2. Goal of Relocation Efforts

The purpose of relocation planning is not to effect an immediate or even a short range rearrangement of our industrial machinery, but rather to lay out long range goals. This is another selling assignment for the industrial mobilization planners - an assignment to sell industry on the need for locating plants according to strategic considerations in addition to the usual factors governing location problems, to cause industrial leaders to think in terms of strategic considerations in any future expansion plans, and to drive home to industry the importance of recognizing the emergency which faces the United States along these lines.

Twelve to fourteen billions of dollars are being spent each year for new plants and equipment. A major portion of this expansion is being carried out in areas which are already too highly concentrated from the standpoint of strategic considerations.

3. Need for Dispersion

Location alone has ceased to be a protection from attack because of the rapid development of modern aircraft and atomic weapons. There is no known military defense against the atomic bomb except dispersion.

If dispersion is the only effective defense against the atomic bomb, think how extremely vulnerable are our concentrated industrial areas, and think also what a stagger-

ing blow could be delivered by a sneak attack or by sabotage employing atomic explosives. Since the atomic bomb appears to offer the greatest threat, let us consider some of the problems of atomic warfare.

4. The Threat of Atomic Weapons

In the first place, atom bombs are very costly, and the essential elements of uranium and plutonium are scarce materials. In addition, delivering the bombs to the target offers two more factors: the expense of delivery and the vulnerability of aircraft in long range flights, probably without escort.

The staggering costs and the problems of delivery will probably mean that no country will ever be able to afford to drop an atomic bomb on any city of 50,000 people or less, or on a congested industrial area of less than five square miles. Since the atomic bomb destroys almost everything within a radius of one-half mile from the point of impact, inflicting moderate structural damage for an additional one and one-half miles, only large, congested industrial areas would be logical targets. Even with improvements in the weapon, it is not believed that the bomb would cause heavy damage beyond three miles from the center.

5. Importance of Relocation Efforts

Taking the aforementioned factors into consideration, the problem of relocation of industry becomes increasingly important, with two obvious steps suggested

at once: locate in the smaller cities and disperse facilities as much as possible - more than three miles apart.

We assume that any future attack upon our country would be made without warning, that it would be an attack of great magnitude, and that it would be aimed at crippling industrial capacity. Geographical location and distance from the enemy offers little protection because of modern developments, but space and dispersion do offer protection.

Efforts toward relocation might well be one of the most important contributions which industry can make to long range mobilization planning. Industrial leaders should evaluate present facilities in the light of any possible future attack. They should look beyond their own plant and see if there are any nearby industries which are potential targets.

6. Possible Points of Attack

We merely have to refer to the typical factors which governed our selection of strategic targets in the last war to see what type of targets any potential enemy might attack in this country. Any plant, large or small, producing a critical item upon which other production might depend could be a logical aiming point of an atomic attack against an industrial section. A highly explosive or inflammable target might be selected to intensify the damage. Public utilities, such as power plants and water systems,

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might well be attacked to cripple an industrial section. Dams, bridges, airbases, supply centers, marsheling yards, Armed Forces installations - all might well be chosen as the point of impact.

Such an understanding on the part of industrial leaders might reveal that a particular plant, while not actually a highly critical facility, might be within a three mile radius of some critical facility or other potential target and thus be highly vulnerable. This fact should temper the decision of management to expand or replace present facilities.

7. Industry's Part

What should industry do about the problem, and where does industry fit into the picture? To begin with, management should add strategic factors to its list of economic factors governing plant location. All future planning should give this factor a very heavy weight because it might well be a decisive factor in any future war. No one will question the fact that dispersed targets offer many headaches to an attacking force. Knowing this fact, let us benefit by the knowledge and start dispersing our facilities, maximizing the difficulties of an attack.

In conclusion, the problem of relocation is a most important one and also a long range one. With the annual rate of industrial building at an estimated twelve or fourteen billions of dollars, it is evident that disper-

sion can be carried on through normal expansion and replacement activities. It is not to be expected that industry will immediately start to move present facilities to rural areas, but it is to be hoped that industry will give serious thought to the matter of strategic relocation.

8. Example of Relocation¹

The Brake Shoe Company has just completed its program of decentralization at a cost of \$15,000,000 with the opening of its new brass works at Meadville, Pennsylvania.

This company, now consisting of sixty plants located in forty communities, has relocated in small town sites for many reasons, one of which was the desire to comply with the government's request for decentralization for national defense reasons.

Other reasons for the program, reasons which are also advantages which might well be realized by other firms, were the desire to provide better working conditions for employees, the program to reduce costs, and an attempt to improve organization and control.

Employees benefitted from the improved living conditions in the new locations, from better facilities in the new plants, and from the installation of new safety devices.

1. "Brake Shoe Opens New Brass Works", New York Times, October 21, 1948, p 41, column 1.

Costs were reduced through the use of improved construction materials, the abandonment of obsolete equipment, the superior production engineering made possible, the improved process engineering which was employed, the improvements in routing made possible, and the careful planning made before each move.

The company was also able to concentrate its efforts on related products by planned decentralization and provide adequately for future expansion.

Although national defense considerations were probably only very slightly influential in causing this company to embark on this active program of decentralization, at least they were considerations.

The advantages derived from the program of decentralization within the organization itself should be given very careful consideration by every company when it considers the questions arising from the problem of strategic relocation. Both the government and the individual firm have much to gain from such a program, and both patriotic and selfish motives may be satisfied in this case.

CHAPTER X

FACILITIES

1. Our Past Record of Armament Programs

Concerning the armament programs of the United States, Arthur Stone Dewing once wrote¹, "Corporations the country over added buildings, plants, even whole groups of plants, to produce munitions and equipment needed in a hectic race to build, in a brief period of time, a defense armament which should have been constructed over a period of years."

Describing the post war period, he continued, "Buildings and machinery will lie idle and decay until another international crisis has started another hectic race for rearmament."

These words certainly describe our past confused efforts to fight a war. We would go through this pattern again and again if no one gave any thought to the necessity of planning for emergencies. At least we would go through the cycle of abandonment and preparation once more if we were to become involved in another war, but the second cycle would not be possible if we were to suffer the very likely defeat that could result from unpreparedness. Two words

1. Arthur Stone Dewing, The Financial Policies of Corporations, (New York, The Ronald Press Co., 1941), Book III, Chapter 3, pp 625-626.

adequately describe this type of action: confusion and waste.

In past wars, the inadequacy of our industrial capacity to meet wartime needs and the frenzied efforts to increase capacity in most industries have caused no serious embarrassment to us because of the protective element of sufficient time to prepare.

Industry has been able to expand output under the stimulus of war with the emphasis on output and only secondarily on efficiency. Funds have been made available in the past by preventing the investment of private capital in non-essential industries, thus diverting this venture capital to the war producing industries, and also by making public funds available.

2. Problems of Conversion

During a period of emergency or war, the problems of conversion vary widely among the various industries necessary for the conduct of war or defense. There are many basic industries, such as steel, power, and transportation, that can merely continue their operations on an expanded scale. Their problem is one of achieving maximum production.

Other important industries, such as the electrical and communications equipment industries, turn out the same type of goods with certain changes in design to meet military needs. Their problem is one of partial conversion.

While some firms are faced with few problems on this matter of conversion, many of our largest facilities have to be almost completely converted from civilian to military production. The peacetime line is either restricted to a small percentage of normal production or eliminated entirely.

3. The Munitions Industry

The munitions industry is in a category by itself. This industry must spring from an almost insignificant base in peacetime to an industry of tremendous importance in a war time economy. The United States has no great private firms, such as the Vickers in England, Shneider-Creusot in France, and Krupp in Germany, whose principle activity even in times of peace is the manufacture of cannon, shells, small arms, and other war materials.

The growth of the munitions industry in the past fits into Mr. Dewing's description of hectic expansion and then post war decay. This growth and decline appears to be not only a very costly indulgence which we have allowed ourselves in the past, but also an extremely time consuming one. The nature of the munitions industry is such that it could very well be a very weak point in our preparedness program.

In a peacetime economy, without guidance from the government, private industry would place its entire attention on its primary job of producing for peacetime needs. Plant layouts, new buildings, and new locations would be influenced

entirely by peacetime considerations. It is for this reason that the government must bear the burden of insuring that we have adequate facilities for war production.

4. Plants Built During World War II

During World War II billions of dollars were spent to build specialized munitions plants, and it might well be asked what has become of these plants and how they might be used in any future emergency.

Some of these plants were not easily sold to private management or were of sufficient importance to our national security to be retained, so today the National Military Establishment is retaining one hundred fifty-one complete plants in use or in standby readiness.¹

Those plants which were readily saleable to private management were preserved by the use of a national security clause, included in the sale contract, providing that the plant will in no way be altered to interfere with its reconversion for the production of the goods for which it was designed and built. Two hundred forty-two plants are thus being held in readiness.¹

5. Goal of Planning for Facilities

The purpose of planning for industrial mobilization is to maintain a state of maximum preparedness at

1. S. E. Reimel and E. R. Henning, Survey of Machine Tool Requirements and Resources (Washington, D. C., The National Security Resources Board, September 7, 1948), p 4.

minimum expense and to minimize the costs of conversion. The agencies working for this goal are also attempting to minimize any new construction that will be required in the event of war.

The United States should have a pool of essential and strategic plants maintained in a state of readiness to be made available for national defense and war production in the event of another emergency. The principle of stockpiling should be extended to include productive capacity.

CHAPTER XI

MACHINE TOOLS

1. A Potential Bottleneck

It is difficult for most people to appreciate the full importance of the machine tool industry in time of mobilization and war production, but the availability of machine tools can determine the production potential of this country. In World War II, the greatest bottleneck was the machine tool industry, and the cruel lessons taught at that time are not to be forgotten so soon.

As has been stated earlier, the Munitions Board is charged with setting aside machine tools worth \$500 million as a vital part of industrial mobilization planning, while the National Security Resources Board is responsible for the broader aspects of the problem: that of formulating policies regarding building up reserves of and conservation of the nation's materiel, and that of dealing with problems of control over the materiel.

2. Reaction of the Industry to the Business Cycle

The machine tool industry is a classical example of a producer-goods industry that is subject to very violent swings with the cyclical changes in our economy. This sensitivity to business conditions makes over-expansion a very serious threat to the economic welfare of the industry and should be worthy of very careful consideration from mobilization planners.

This characteristic of the industry would make expansion during war time a purely patriotic act on the part of the industry if the government did not recognize the problem and do something about it. One solution is to permit rapid amortization of plant and equipment during periods of national emergency in order to maintain a healthy and active industry.

3. A Study by the National Security Resources Board

S. E. Reimel and E. R. Henning made a study of machine tool requirements and resources for Arthur M. Hill, chairman of the National Security Resources Board, and submitted on September 7, 1948, a report entitled Survey of Machine Tool Requirements and Resources. Since this type of survey is characteristic of the methodical approach to the various problems of mobilization planning, a digest of their findings and recommendations follows.

This study deals with the following tools:

- Machine tool attachments and accessories,
- Gauges and machinists' precision measuring tools,
- Abrasive products,
- Cutting tools,
- Cranes and hoists,
- Foundry equipment and supplies,
- Metal melting furnaces,
- Light power driven tools,

Portable electric and pneumatic tools,
Mechanics' hand service tools, and
Chains.

The survey treats the problem of machine tools in its broad aspects as one dealing with the current capacity of the industry, the stockpiling of machine tools, plans for achieving full output in the machine tool industry, and detailed plans of distributing machine tools.

Considering the current capacity and plans for achieving full output, they discovered that the machine tool industry was, in 1948, working at a level as high as could be expected in time of peace with a yearly output of \$30,000,000. However, the industry could promptly double its existing production still using one shift working forty hours a week without requiring any substantial amounts of tools to attain full war capacity. Reserve plants are being maintained in a satisfactory state of readiness to further augment production if needed.

Present reserves of 90,000 tools are available to bridge the gap, at least in part, between early requirements for tools and the attainment by the machine tool industry of full wartime required output.

For the rapid distribution of reserve tools in case of emergency, plans are now being prepared for a central control agency to permit rapid identification and location of reserve tools, and shipment to production facilities.

These investigators recommended that reserve tools should be used to the utmost in the current rearmament program to serve as a check on the condition of the tools and to assure a greater degree of readiness by actually going through the procedures. The reserve stocks of accessory equipment, such as cutting tools, and guages, should be used for the same reasons.

They also recommended that the channels of authority be set up now to avoid duplication of effort and to have a smoothly running organization when the need arises. It is apparently difficult to determine where the functions of the National Security Resources Board end and the functions of the Munitions Board begin.

The most heartening part of the report is the fact that pool orders for machine tools, totaling 100,000, are being prepared now, contingent upon an emergency. Each selected tool builder will have in his possession his assigned order before the emergency arises, so the whole industry will be able to get going without waiting for any further orders. These so-called "phantom orders" are being placed through the Reconstruction Finance Corporation.

CHAPTER XII

IMPORTANCE OF INDUSTRIAL MOBILIZATION

PLANNING TO PRIVATE INDUSTRY

1. Scope of Planning Efforts

In its very scope industrial mobilization planning is of very great importance to industry. The Munitions Board expects to survey some 22,000 to 25,000 plants in the United States, representing about 90% of the productive capacity of the country¹, and, according to T. H. Hargrave, Chairman of the Munitions Board, 82,000 industrial plants are of interest to the military forces for planning purposes.

2. Voluntary Role of Private Enterprise

United States industry has a vital part in the planning for mobilization, and its role is an entirely voluntary one. It is necessary that the job of carrying out the program falls on the shoulders of industry because industry has the know-how of design, development, tooling, production, and planning plus that elusive ability known as technique.

It is up to industry to develop complete company plans for war operations, to determine necessary additional facilities, manpower, tools, and material to carry out

1. Eleanor Roberts, "Industry is Ready for Any War Crisis", Boston Sunday Post, October 31, 1948.

planned production. Industry must establish pilot lines of production tools, if necessary, and make certain advance plans with subcontractors. Only the individual managers can lay out detailed plans of orders to be cancelled, materials to be purchased, manpower to be procured, and equipment to be rearranged in case of emergency. The success of the entire program rests on the willingness of private enterprise to meet this responsibility.

3. Selfish Interest in Program

In many respects, industry has a selfish interest in co-operating with industrial mobilization planners. Obviously, if a company co-operates in carrying out plant surveys and in working out tentative production schedules, it will be producing those products for which it will be best fitted, thus retaining peacetime production skills, and it will also gain an opportunity to do its best work.

Industry has much at stake in any future war, considering both its patriotic motives and its selfish interests. Should we be attacked in the future, without warning and consequently without precious time to mobilize as we have in the past, only carefully laid plans swiftly executed would save us from destruction and defeat.

Conditions are such that any individual firm refusing to co-operate in planning for mobilization would be in an extremely vulnerable position to say the least. If a company were unprepared when the unexpected blow was

struck, it would be unable to participate in the initial phase of mobilization and might see its raw materials and labor force drained away. Then the company would have to sit idly by, suffering losses, until the initial burst of mobilization passed. Finally, this company might be assigned a product for which it would be only partially suited to produce and might be able to operate at only partial capacity for a prolonged period.

The innumerable possibilities of a situation of this sort might well cause serious thought on the part of any firm not aware of the implications of indifference.

The government's evaluation of foreign potential to wage war, including atomic warfare, biological warfare, and sabotage, provides industry with vital information required for possible defense measures. The study of relocation and dispersal problems, underground activities, camouflage, dummy installations, and false records to confuse the enemy intelligence - all of these studies by the government bear directly on industrial problems in time of war.

4. Interest of Small Concerns in Planning

Even the smaller plants in the United States have an important stake in planning for industrial mobilization because the government is seeking widest practicable geographical dispersion of the war load with no set minimum limit as to the size of facilities. Multiple sources of

identical items will be sought.

Pressure will probably be brought to avoid over-concentrating business with certain strong companies by permitting losing companies to remain in the picture even though their bids might be slightly higher than their larger competitors'. To disperse the load of wartime production as much as possible, non-congested areas and small cities will be combed for suitable plants for war time work.

Government support will probably be necessary in certain special cases to prevent certain war time arts, such as the adhesion of rubber to steel in the manufacture of tanks, from becoming extinct.

The larger companies, of course, will have to carry the largest share of the war load because of their large capacity, their efficiency of operation, and the relative ease of conversion made possible by their know how.

5. Internal Planning Needed

Every plant should give careful thought to the idea of formulating its own plans for mobilization. The task of planning is not an easy one, but rather a very difficult one indeed. It is difficult to determine exactly what type of products each plant will make; it is impossible to estimate accurately what future costs will be in production; and the whole job of planning consumes time and money.

Nevertheless, each plant should consider the advisability of setting up a permanent organization for

industrial mobilization with a major executive in charge. There should be an operating director of planning to contact the government planning agencies and to gather the information from subordinate officials. Perhaps the director should have a staff to assist him with the problems of planning, having subofficials also acting as representatives of the internal organization for industrial mobilization planning.

Those executives responsible for planning should be familiar with the internal operations of the plant as well as any particular problems of their company or industry. They should be familiar with special problems that arose during World War II, and, above all, they should understand the over all objectives of industrial mobilization planning.

In spite of the difficulties and cost involved, each plant should formulate its own plans for M Day and should keep these plans up-to-date. The initial survey will be difficult for any plant if properly conducted, but keeping the plan current will present fewer problems.

CHAPTER XIII

EXAMPLE OF INDUSTRIAL MOBILIZATION PLANNING

BY KOPPERS COMPANY INC.¹

The Koppers Co., Inc. of Pittsburgh, Pennsylvania, has just completed its initial phase of industrial mobilization planning and is now preparing its record of allocations, tentative production orders, and other detailed plans which will be executed on M Day.

1. Type of Operations

This company designs and constructs by-product coke plants, chemical plants, and other structures; it operates coke plants and blast furnaces; it produces coal tar products, chemicals, shop and foundry products, piston rings, and treated forest products.

The wide range of products and the very size of this concern makes it an excellent subject for study. The planning embraces six operating divisions and fifty-three individual plants.

2. Objectives of Planning Efforts

The Koppers Company recognizes the full importance of industrial mobilization planning to our economy and to our way of life, so it has set up three primary objectives in the preparation of company plans.

1. Taken from Industrial Mobilization Plan, Sections 1 & 2 (Pittsburg, Koppers Co., Inc., 1948).

The first is to aid in preventing a third world war through achieving industrial preparedness by determining the industrial potential of each individual plant, of each division, and of the company as a whole.

The second objective is to keep this data up to date by frequent revision, revising at least once a year or more often if necessary. They rightfully feel that the data is of no real value unless it is kept current.

The third primary objective is to be prepared at all times to supply prompt and accurate information to the Munitions Board and to the Armed Forces. They thus expressly state their willingness to co-operate with the government in this vital work.

The company also endeavors to give all levels of management an opportunity to take stock of plant equipment and processes and an opportunity to analyze all present and future products that the company can make.

3. Internal Organization for Mobilization Planning

The Koppers Company has not only appointed an industrial mobilization director, who co-operates with the Armed Forces and the government in the allocation of plant capacity for the production of munitions, but also maintains an organization for industrial mobilization planning within the company's regular organization.

Feeling that a third world war appears to be inevitable but that timely and adequate preparedness can

assist greatly in preventing it, this company believes that industry is just as responsible for preparedness as are the military forces. They believe that industry must determine its potential at once so that the requirements of the Armed Forces and the civilian economy can be compared with our capacity to produce, in order that strategy and tactics may be tempered by this knowledge.

Only by knowing the detailed potential of each individual plant can we accurately see the composite picture and visualize the country's over-all potential. The country will benefit through the tremendous saving in time should there be another war, and each individual firm will benefit from an opportunity to take stock of present equipment and to consider all of the various products which it is capable of producing.

The organization for industrial mobilization planning within the company consists of the president acting as the director of the planning, the production manager as the over-all representative, the division managers as the representatives for their divisions, and the plant managers acting as the representatives for their plants. Each individual is also familiar with the broader aspects of industrial mobilization planning. This organization recognizes the fact that industrial mobilization planning in almost any company is primarily a production and an engineering problem which needs recognition at the very top

levels of management.

Planning for mobilization covers all manufacturing, engineering, and research activities of this company, plant by plant, division by division, and finally for the company as a whole. It considers the need for key management officials, scientifically trained men, and general workers, for normal and maximum operations.

4. Procedure for Survey

The over-all procedure is for each plant superintendent to determine his own industrial potential, for each division manager to make a summation and evaluation of the reports of the plants, and finally for the production manager to compile a description of the whole company, its products, and its personnel.

One month was allowed for the fifty-three plants to make their returns; one month was allowed for the divisions to complete their work; and one month was allowed for the composite plan to be completed. Thus, a total of three months was all that was required for this large company to make an evaluation of its industrial potential. A revision was to have been started on December 1, 1948, with the same timetable.

The following sections will indicate the detailed studies made the company over by the Koppers organization on its own initiative and at its own expense.

a. Individual Plant Survey

Each plant was required to furnish a detailed report on all of its activities, its organization, and its facilities.

The report stated the Division, the name of the plant, the location, and the name of the manager. It included a chart of the organization of the plant, showing the key personnel, listing the scientifically trained personnel with their degrees and principal fields of activity. It also contained a thumbnail sketch of principal department heads and other key personnel, indicating those who could be replaced only with great difficulty.

The personnel of the plant were tabulated and listed by male or female, hourly or salaried, and the percent of skilled workers was indicated.

An analysis was made of principal materials: raw materials for production, supplies, fuel, and maintenance and repair materials to show the amounts required for normal and maximum operation.

The principal products were tabulated, showing the amounts produced under normal operating conditions, with a forty hour, five day week (unless operated continuously), and also under maximum operating conditions. Wherever possible, these figures were expressed quantitatively; otherwise, in sales dollars. The number of shifts then being worked and the hours per shift by principal departments were

listed.

It was necessary to make a comprehensive plant layout print showing for each building the following information: an identifying number, the type of construction, the number of floor levels, the building area in square feet, the percentage of the area then used in production, and the percentage then being used in warehousing.

The type of fire protection was analyzed, listing both major and auxiliary equipment available in the plant as well as organized community apparatus available. Other types of security measures, such as police guard or fencing were indicated.

The report included power, both internal and external. The power received from sources outside of the plant was considered according to the kind of power and its source, according to standby and emergency arrangements, and according to the sufficiency of feeders, generators, transformers, and the distribution system to permit maximum operation in all departments of the plant.

If power was generated within the plant, the unit generating capacities and the fuel used were studied. Emergency substitutes were considered, and the ability of the system to care for maximum needs was also considered.

A listing was made of all principal items of production equipment, regardless of how extensive the list was. The list covered such items as: melting and heat treating

furnaces, stills, storage tanks, columns, forging presses, forging machines, special machinery, and machine tools. The purchase dates of all equipment together with the present condition of the machinery accompanied the inventory.

A study was made of the toolroom, machine shop, and employee service room facilities to determine if they were adequate for maximum operation. The plant gage and instrument checking facilities were evaluated as well as shipping facilities. Material handling methods were described and the condition of the equipment indicated. Shipping facilities available were evaluated and described.

Personnel factors entered into this comprehensive study. If the plant was then unionized, the name of the union was to be given. Any wage systems in effect were described briefly.

A description was made of production control and planning methods, inspection and quality control methods, and any cost system being used.

The work performed by each plant in World War II on either a prime or a sub-contract basis was considered for its possible aid in indicating the work for which it might best be suited. A listing was made of each of the principle items produced, quantitatively or in dollars, and the percentage of the plant's capacity devoted to war production was indicated. A listing was also made of the maximum

number of employees, male and female, employed during the war, stating the percentage of skilled workers.

Consideration was given to the ability of the plant to expand its production to produce additional quantities of its regular products in an emergency either on presently available property or adjoining property. Special attention was given to overloading service utilities.

Each plant also considered what other work, other than that performed in World War II, it might be specially qualified to do for the Armed Forces or the essential economy. The plant manager recommended whether or not his plant should do such work in case of another war, and if he did recommend it, he had to state what would be required to get it under way.

b. Survey by Each Division

Each division was given one month to prepare and submit its report, based on the reports from each plant. The division report stated the name and address of division headquarters, the plants operated by the division, their location, and the manager's name for each plant.

The division report also included an organization and key personnel chart, listing the scientifically trained men with their field of specialization, and the principal key personnel then with a thumbnail sketch of their age, experience, and education.

The total employees for the division at the time

of the survey were tabulated for the headquarters and for the plants by male, female, hourly, and annual, giving the percentage of skilled and unskilled workers. The maximum number of employees during World War II were also tabulated by male, female, and total, giving the percentage of skilled workers.

The report also covered divisional engineering, design, research, and laboratory facilities available with a brief description of each by location. Production control and planning methods were also described.

A summary tabulation was made for the entire division of products produced during the current year, giving both the normal and maximum capacity for these products. Products produced in the division during the second world war both on a prime and subcontract basis were listed separately with amounts produced, giving the percentage of the division's capacity devoted to war work.

The division industrial mobilization representative was also required to give his attention to any other products, other than those produced during World War II or after, which the division might be specially qualified to perform for the Armed Forces or the essential civilian economy. He was asked to state whether or not he recommended that the division do such work in the event of another war and to describe what steps would be required to get it under way.

c. Consolidated Report

A compilation was made of all of the reports from the operating divisions, and an over-all survey for the entire company completed.

The summary included a description of the company, its products, and size with a table of organization and description of key personnel.

A listing was made of the principal products and amounts produced during the current year, giving both maximum and normal production for each product. A separate listing was made of all products, showing amounts produced during World War II on a prime or sub-contract basis, stating the percentage of the company's capacity devoted to war production.

The personnel employed currently was tabulated by annual and hourly workers with total, and by male and female workers with total. The maximum number of employees during World War II were classified by male, female, and total, giving the percentage of skilled workers.

Finally, the industrial mobilization representative for the plant was also required to give consideration to products, other than those produced during or since World War II, which the company might be specially qualified to perform for the Armed Forces or the essential civilian economy, and to state whether or not he recommended that the company perform such work in the event of another

war. He was also required to describe what steps would be necessary to get this work under way.

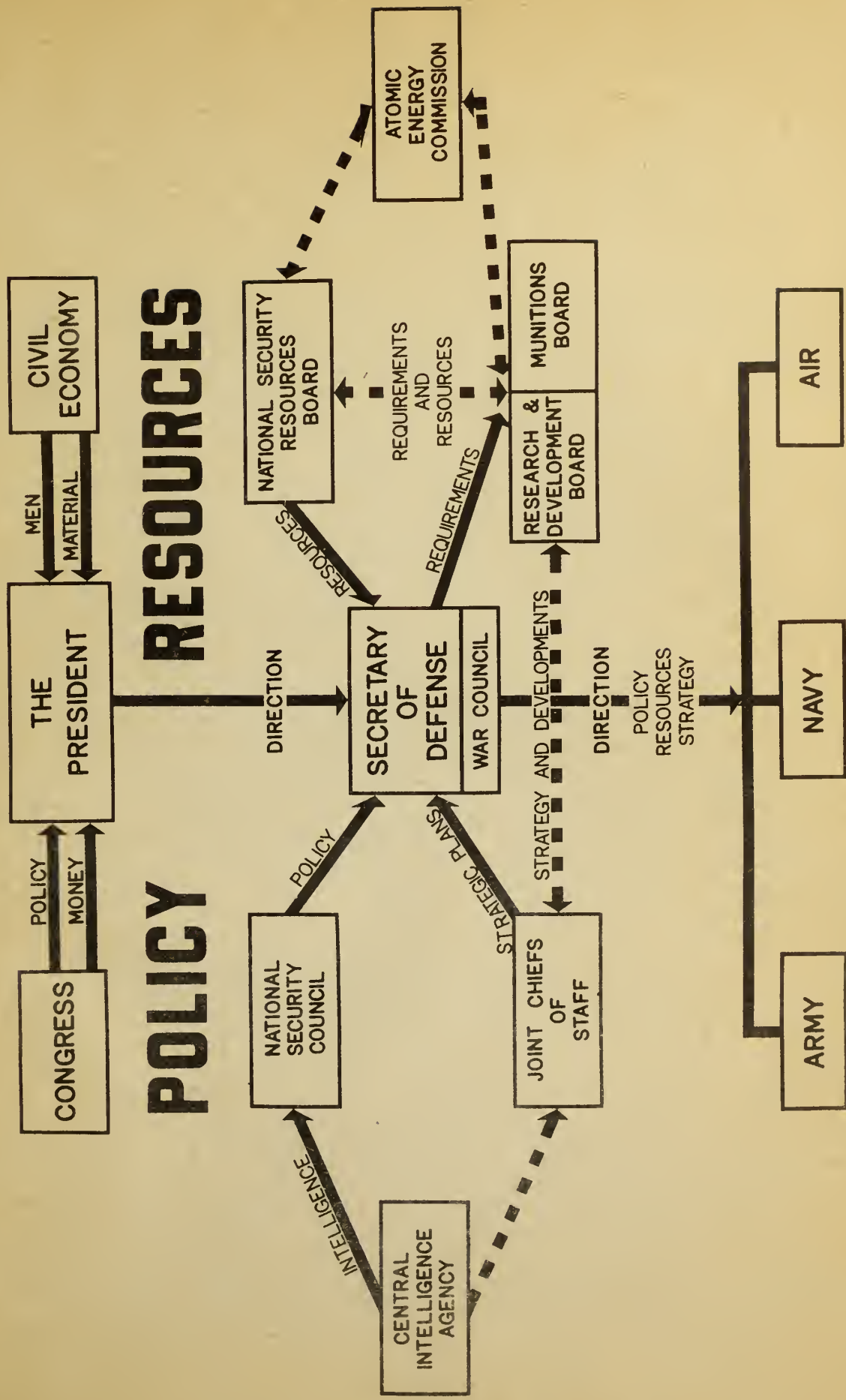
5. Conclusion

From this outline of the detailed analysis made by the Koppers Company, it is evident that the company has grasped the full significance of the importance of industrial mobilization planning. This company entered the program wholeheartedly, throwing its resources with the government in a comprehensive study of its productive capacity. Of course, by undertaking a survey of this sort a company must bear the expenses with the returns not immediately obvious, but the long-run advantages are certainly evident.

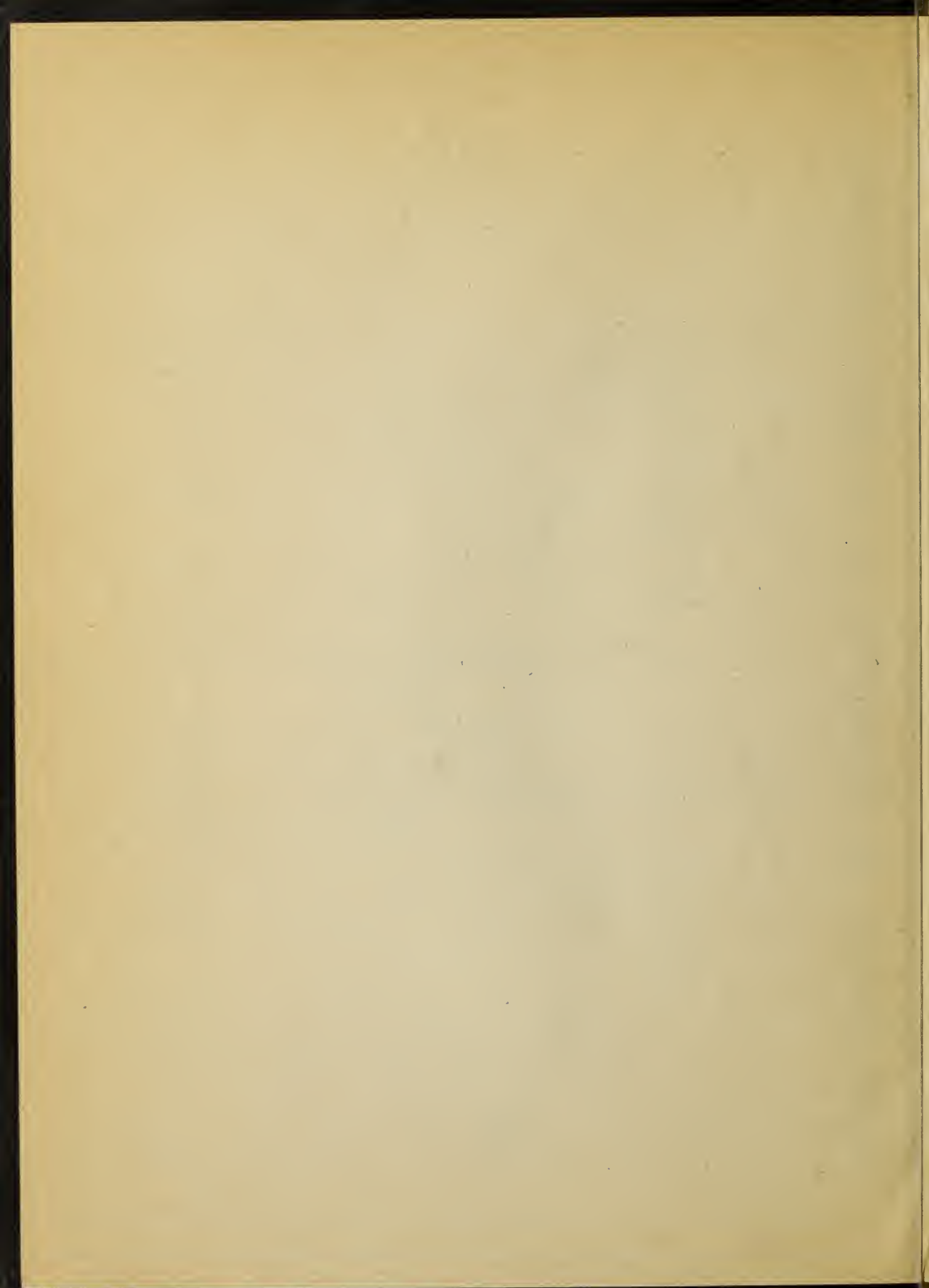
Even from a superficial study of industrial mobilization planning, it becomes almost immediately apparent that the success of the entire program rests squarely on the shoulders of the industry of the United States.

The Koppers Company has apparently recognized its patriotic duty in this respect and has given freely its time and talent to the cause. It is to the credit of American industry that the example of the Koppers Company appears to be the rule, and this fact points to outstanding success in the attainment of the goal.

RELATIONSHIP OF ELEMENTS IN NATIONAL SECURITY



Source: Distributed at a course on Economic Mobilization presented at Harvard University from November 13 - 24, 1948 by the Industrial College of the Armed Forces.



CHAPTER XIV

CONCLUSION

1. Two Schools of Thought

There are those who hold that the readjustments for war should be kept to the barest minimum, thus keeping the wealth-producing capacity of industry adequate for both the war needs and also the usual demands of a civilian economy. They hold that all business will thus prosper, paying good wages and earning high profits. The economy will be held at a high peak, and everyone will benefit. These people think only in terms of the wars of the past, not in terms of total war.

Others feel that the most rigid economies should be practiced in any war in order to throw the entire industrial might of our country into the battle. The entire country would concentrate on the business of winning the war to insure an early victory.

From all indications, if there is another war, we will have no choice between these alternatives. If another war does come, our war effort will have to be total and the most rigid economies practiced.

2. Need for Planning

We can not know whether or not war is inevitable, but we do know that it is at least a possibility. To protect ourselves, we should plan as if war were inevitable.

In the past wars, the United States has had

sufficient time to arm and bring the industrial might of the greatest productive machine in the world into the battle. Our overwhelming superiority in industrial know-how and mass production methods is the mightiest weapon we have, but it has been traditionally slow moving. To bring this potential into play requires months of patient, painstaking planning.

It is certainly very likely, almost absolutely certain, that any future war of major proportions will involve this country. It is also just as true that the United States, as the strongest potential enemy of any aggressor nation, will have to be neutralized first. No nation will ever again repeat the costly mistakes of past aggressors in underestimating the power of the United States. We will be attacked with great force and without warning, and we will not be allowed the time to rearm, time which has been our salvation in the past.

3. Planning Needed for Various Phases of the Economy

When and if the attack does come, we must have detailed plans for immediate mobilization waiting to be executed immediately. We must be able to effect the transition from a peacetime to a wartime economy without costly delays.

Our manpower must be mobilized at once and rigidly controlled, allocating men between industry and the Armed Forces. Painstaking studies of the needs of industry

and the services, a careful inventory of the available manpower, and an analysis of any legislation which will be needed- all of these steps must be prepared in advance.

Industry must have detailed production plans waiting to be executed at the declaration of an emergency. The conversion must start the day M Day is declared. Industry must work closely with the Armed Forces to keep these plans current.

We must have reserves of tools and materials on hand with detailed plans for their distribution and allocation. Critical items should be carefully considered in order to insure an adequate supply. The organization to administer this phase of mobilization should be an existing body to avoid any possible source of delay in activating an agency to care for this vital function.

Standby plants should be readied at once, having been maintained in operating condition during the years preceeding the emergency.

Since a war economy can not function in the midst of economic chaos, economic stabilization measures will be needed to control the pressures toward economic disruption. These controls must be planned in advance, awaiting only the approval of the legislature. In a period of full employment, such as we are experiencing today, with the money supply already inflated, a major war effort would require a substantial lowering of living standards and would pre-

sent unusual economic problems.

Our rail, highway, air, and water systems are taxed even today to meet the demands of an active peacetime economy. Wartime demands would require extremely careful and skillful handling on the part of a government control agency. The blueprints for co-ordinating and allocating transportation facilities is a very important part of industrial mobilization planning.

All sources of industrial and domestic power will also have to be controlled in some measure to insure that proper conservation measures will be taken. All of these steps will have to be worked out in advance.

4. Stake of Private Enterprise

None of these objectives can be attained without painstaking, detailed planning with the wholehearted co-operation of industry. Now is the time to lay these necessary plans in order to achieve maximum preparedness in the minimum time.

This thesis was not intended to point with alarm to an impending war, but rather to emphasize the need for preparation. War can certainly be avoided, but we must always be prepared for any eventuality. The costs of laying these plans for mobilization represent a modest investment for the possible savings.

Private industry has a great stake in the plans for mobilization, not only because of the probable effects

of any future crisis on the industrial segment of our economy, but also because of the harmony that can be achieved through the proper assignment of products and the anticipation of bottlenecks and difficulties of all sorts. Private enterprise carries a tremendous responsibility in the planning for any future conflict because it can spell the difference between outstanding achievements or abortive efforts.

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APPENDIXTHE NATIONAL SECURITY ACT OF 1947



NATIONAL SECURITY ACT OF 1947

[PUBLIC LAW 253—80TH CONGRESS]

[CHAPTER 343—1ST SESSION]

[S. 758]

AN ACT

To promote the national security by providing for a Secretary of Defense; for a National Military Establishment; for a Department of the Army, a Department of the Navy, and a Department of the Air Force; and for the coordination of the activities of the National Military Establishment with other departments and agencies of the Government concerned with the national security.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

That this Act may be cited as the "National Security Act of 1947".

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DECLARATION OF POLICY

SEC. 2. In enacting this legislation, it is the intent of Congress to provide a comprehensive program for the future security of the United States; to provide for the establishment of integrated policies and

procedures for the departments, agencies, and functions of the Government relating to the national security; to provide three military departments for the operation and administration of the Army, the Navy (including naval aviation and the United States Marine Corps), and the Air Force, with their assigned combat and service components; to provide for their authoritative coordination and unified direction under civilian control but not to merge them; to provide for the effective strategic direction of the armed forces and for their operation under unified control and for their integration into an efficient team of land, naval, and air forces.

TITLE I—COORDINATION FOR NATIONAL SECURITY

NATIONAL SECURITY COUNCIL

SEC. 101. (a) There is hereby established a council to be known as the National Security Council (hereinafter in this section referred to as the "Council").

The President of the United States shall preside over meetings of the Council: *Provided*, That in his absence he may designate a member of the Council to preside in his place.

The function of the Council shall be to advise the President with respect to the integration of domestic, foreign, and military policies relating to the national security so as to enable the military services and the other departments and agencies of the Government to cooperate more effectively in matters involving the national security.

The Council shall be composed of the President; the Secretary of State; the Secretary of Defense, appointed under section 202; the Secretary of the Army, referred to in section 205; the Secretary of the Navy; the Secretary of the Air Force, appointed under section 207; the Chairman of the National Security Resources Board, appointed under section 103; and such of the following named officers as the President may designate from time to time: The Secretaries of the executive departments, the Chairman of the Munitions Board appointed under section 213, and the Chairman of the Research and Development Board appointed under section 214; but no such additional member shall be designated until the advice and consent of the Senate has been given to his appointment to the office the holding of which authorizes his designation as a member of the Council.

(b) In addition to performing such other functions as the President may direct, for the purpose of more effectively coordinating the policies and functions of the departments and agencies of the Government relating to the national security, it shall, subject to the direction of the President, be the duty of the Council—

(1) to assess and appraise the objectives, commitments, and risks of the United States in relation to our actual and potential military power, in the interest of national security, for the purpose of making recommendations to the President in connection therewith; and

(2) to consider policies on matters of common interest to the departments and agencies of the Government concerned with the national security, and to make recommendations to the President in connection therewith.

(c) The Council shall have a staff to be headed by a civilian executive secretary who shall be appointed by the President, and who shall receive compensation at the rate of \$10,000 a year. The executive secretary, subject to the direction of the Council, is hereby authorized, subject to the civil-service laws and the Classification Act of 1923, as amended, to appoint and fix the compensation of such personnel as may be necessary to perform such duties as may be prescribed by the Council in connection with the performance of its functions.

(d) The Council shall, from time to time, make such recommendations, and such other reports to the President as it deems appropriate or as the President may require.

CENTRAL INTELLIGENCE AGENCY

SEC. 102. (a) There is hereby established under the National Security Council a Central Intelligence Agency with a Director of Central Intelligence, who shall be the head thereof. The Director shall be appointed by the President, by and with the advice and consent of the Senate, from among the commissioned officers of the armed services or from among individuals in civilian life. The Director shall receive compensation at the rate of \$14,000 a year.

(b) (1) If a commissioned officer of the armed services is appointed as Director then—

(A) in the performance of his duties as Director, he shall be subject to no supervision, control, restriction, or prohibition (military or otherwise) other than would be operative with respect to him if he were a civilian in no way connected with the Department of the Army, the Department of the Navy, the Department of the Air Force, or the armed services or any component thereof; and

(B) he shall not possess or exercise any supervision, control, powers, or functions (other than such as he possesses, or is authorized or directed to exercise, as Director) with respect to the armed services or any component thereof, the Department of the Army, the Department of the Navy, or the Department of the Air Force, or any branch, bureau, unit or division thereof, or with respect to any of the personnel (military or civilian) of any of the foregoing.

(2) Except as provided in paragraph (1), the appointment to the office of Director of a commissioned officer of the armed services, and his acceptance of and service in such office, shall in no way affect any status, office, rank, or grade he may occupy or hold in the armed services, or any emolument, perquisite, right, privilege, or benefit incident to or arising out of any such status, office, rank, or grade. Any such commissioned officer shall, while serving in the office of Director, receive the military pay and allowances (active or retired, as the case may be) payable to a commissioned officer of his grade and length of service and shall be paid, from any funds available to defray the expenses of the Agency, annual compensation at a rate equal to the amount by which \$14,000 exceeds the amount of his annual military pay and allowances.

(c) Notwithstanding the provisions of section 6 of the Act of August 24, 1912 (37 Stat. 555), or the provisions of any other law, the Director of Central Intelligence may, in his discretion, terminate the employment of any officer or employee of the Agency whenever

he shall deem such termination necessary or advisable in the interests of the United States, but such termination shall not affect the right of such officer or employee to seek or accept employment in any other department or agency of the Government if declared eligible for such employment by the United States Civil Service Commission.

(d) For the purpose of coordinating the intelligence activities of the several Government departments and agencies in the interest of national security, it shall be the duty of the Agency, under the direction of the National Security Council—

(1) to advise the National Security Council in matters concerning such intelligence activities of the Government departments and agencies as relate to national security;

(2) to make recommendations to the National Security Council for the coordination of such intelligence activities of the departments and agencies of the Government as relate to the national security;

(3) to correlate and evaluate intelligence relating to the national security, and provide for the appropriate dissemination of such intelligence within the Government using where appropriate existing agencies and facilities: *Provided*, That the Agency shall have no police, subpoena, law-enforcement powers, or internal-security functions: *Provided further*, That the departments and other agencies of the Government shall continue to collect, evaluate, correlate, and disseminate departmental intelligence: *And provided further*, That the Director of Central Intelligence shall be responsible for protecting intelligence sources and methods from unauthorized disclosure;

(4) to perform, for the benefit of the existing intelligence agencies, such additional services of common concern as the National Security Council determines can be more efficiently accomplished centrally;

(5) to perform such other functions and duties related to intelligence affecting the national security as the National Security Council may from time to time direct.

(e) To the extent recommended by the National Security Council and approved by the President, such intelligence of the departments and agencies of the Government, except as hereinafter provided, relating to the national security shall be open to the inspection of the Director of Central Intelligence, and such intelligence as relates to the national security and is possessed by such departments and other agencies of the Government, except as hereinafter provided, shall be made available to the Director of Central Intelligence for correlation, evaluation, and dissemination: *Provided, however*, That upon the written request of the Director of Central Intelligence, the Director of the Federal Bureau of Investigation shall make available to the Director of Central Intelligence such information for correlation, evaluation, and dissemination as may be essential to the national security.

(f) Effective when the Director first appointed under subsection (a) has taken office—

(1) the National Intelligence Authority (11 Fed. Reg. 1337, 1339, February 5, 1946) shall cease to exist; and

(2) the personnel, property, and records of the Central Intelligence Group are transferred to the Central Intelligence Agency, and such Group shall cease to exist. Any unexpended balances of appropriations, allocations, or other funds available or authorized to be made available for such Group shall be available and shall be authorized to be made available in like manner for expenditure by the Agency.

NATIONAL SECURITY RESOURCES BOARD

SEC. 103. (a) There is hereby established a National Security Resources Board (hereinafter in this section referred to as the "Board") to be composed of the Chairman of the Board and such heads or representatives of the various executive departments and independent agencies as may from time to time be designated by the President to be members of the Board. The Chairman of the Board shall be appointed from civilian life by the President, by and with the advice and consent of the Senate, and shall receive compensation at the rate of \$14,000 a year.

(b) The Chairman of the Board, subject to the direction of the President, is authorized, subject to the civil-service laws and the Classification Act of 1923, as amended, to appoint and fix the compensation of such personnel as may be necessary to assist the Board in carrying out its functions.

(c) It shall be the function of the Board to advise the President concerning the coordination of military, industrial, and civilian mobilization, including—

(1) policies concerning industrial and civilian mobilization in order to assure the most effective mobilization and maximum utilization of the Nation's manpower in the event of war;

(2) programs for the effective use in time of war of the Nation's natural and industrial resources for military and civilian needs, for the maintenance and stabilization of the civilian economy in time of war, and for the adjustment of such economy to war needs and conditions;

(3) policies for unifying, in time of war, the activities of Federal agencies and departments engaged in or concerned with production, procurement, distribution, or transportation of military or civilian supplies, materials, and products;

(4) the relationship between potential supplies of, and potential requirements for, manpower, resources, and productive facilities in time of war;

(5) policies for establishing adequate reserves of strategic and critical material, and for the conservation of these reserves;

(6) the strategic relocation of industries, services, government, and economic activities, the continuous operation of which is essential to the Nation's security.

(d) In performing its functions, the Board shall utilize to the maximum extent the facilities and resources of the departments and agencies of the Government.

TITLE II—THE NATIONAL MILITARY ESTABLISHMENT

ESTABLISHMENT OF THE NATIONAL MILITARY ESTABLISHMENT

SEC. 201. (a) There is hereby established the National Military Establishment, and the Secretary of Defense shall be the head thereof.

(b) The National Military Establishment shall consist of the Department of the Army, the Department of the Navy, and the Department of the Air Force, together with all other agencies created under title II of this Act.

SECRETARY OF DEFENSE

SEC. 202. (a) There shall be a Secretary of Defense, who shall be appointed from civilian life by the President, by and with the advice and consent of the Senate: *Provided*, That a person who has within ten years been on active duty as a commissioned officer in a Regular component of the armed services shall not be eligible for appointment as Secretary of Defense. The Secretary of Defense shall be the principal assistant to the President in all matters relating to the national security. Under the direction of the President and subject to the provisions of this Act he shall perform the following duties:

(1) Establish general policies and programs for the National Military Establishment and for all of the departments and agencies therein;

(2) Exercise general direction, authority, and control over such departments and agencies;

(3) Take appropriate steps to eliminate unnecessary duplication or overlapping in the fields of procurement, supply, transportation, storage, health, and research;

(4) Supervise and coordinate the preparation of the budget estimates of the departments and agencies comprising the National Military Establishment; formulate and determine the budget estimates for submittal to the Bureau of the Budget; and supervise the budget programs of such departments and agencies under the applicable appropriation Act:

Provided, That nothing herein contained shall prevent the Secretary of the Army, the Secretary of the Navy, or the Secretary of the Air Force from presenting to the President or to the Director of the Budget, after first so informing the Secretary of Defense, any report or recommendation relating to his department which he may deem necessary: *And provided further*, That the Department of the Army, the Department of the Navy, and the Department of the Air Force shall be administered as individual executive departments by their respective Secretaries and all powers and duties relating to such departments not specifically conferred upon the Secretary of Defense by this Act shall be retained by each of their respective Secretaries.

(b) The Secretary of Defense shall submit annual written reports to the President and the Congress covering expenditures, work, and accomplishments of the National Military Establishment, together with such recommendations as he shall deem appropriate.

(c) The Secretary of Defense shall cause a seal of office to be made for the National Military Establishment, of such design as the President shall approve, and judicial notice shall be taken thereof.

MILITARY ASSISTANTS TO THE SECRETARY

SEC. 203. Officers of the armed services may be detailed to duty as assistants and personal aides to the Secretary of Defense, but he shall not establish a military staff.

CIVILIAN PERSONNEL

SEC. 204. (a) The Secretary of Defense is authorized to appoint from civilian life not to exceed three special assistants to advise and assist him in the performance of his duties. Each such special assistant shall receive compensation at the rate of \$10,000 a year.

(b) The Secretary of Defense is authorized, subject to the civil-service laws and the Classification Act of 1923, as amended, to appoint and fix the compensation of such other civilian personnel as may be necessary for the performance of the functions of the National Military Establishment other than those of the Departments of the Army, Navy, and Air Force.

DEPARTMENT OF THE ARMY

SEC. 205. (a) The Department of War shall hereafter be designated the Department of the Army, and the title of the Secretary of War shall be changed to Secretary of the Army. Changes shall be made in the titles of other officers and activities of the Department of the Army as the Secretary of the Army may determine.

(b) All laws, orders, regulations, and other actions relating to the Department of War or to any officer or activity whose title is changed under this section shall, insofar as they are not inconsistent with the provisions of this Act, be deemed to relate to the Department of the Army within the National Military Establishment or to such officer or activity designated by his or its new title.

(c) The term "Department of the Army" as used in this Act shall be construed to mean the Department of the Army at the seat of government and all field headquarters, forces, reserve components, installations, activities, and functions under the control or supervision of the Department of the Army.

(d) The Secretary of the Army shall cause a seal of office to be made for the Department of the Army, of such design as the President may approve, and judicial notice shall be taken thereof.

(e) In general the United States Army, within the Department of the Army, shall include land combat and service forces and such aviation and water transport as may be organic therein. It shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land. It shall be responsible for the preparation of land forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Army to meet the needs of war.

DEPARTMENT OF THE NAVY

SEC. 206. (a) The term "Department of the Navy" as used in this Act shall be construed to mean the Department of the Navy at the seat of government; the headquarters, United States Marine Corps; the entire operating forces of the United States Navy, including naval aviation, and of the United States Marine Corps, including the reserve components of such forces; all field activities, headquarters, forces, bases, installations, activities, and functions under the control or supervision of the Department of the Navy; and the United States Coast Guard when operating as a part of the Navy pursuant to law.

(b) In general the United States Navy, within the Department of the Navy, shall include naval combat and services forces and such aviation as may be organic therein. It shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It shall be responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned, and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Navy to meet the needs of war.

All naval aviation shall be integrated with the naval service as part thereof within the Department of the Navy. Naval aviation shall consist of combat and service and training forces, and shall include land-based naval aviation, air transport essential for naval operations, all air weapons and air techniques involved in the operations and activities of the United States Navy, and the entire remainder of the aeronautical organization of the United States Navy, together with the personnel necessary therefor.

The Navy shall be generally responsible for naval reconnaissance, antisubmarine warfare, and protection of shipping.

The Navy shall develop aircraft, weapons, tactics, technique, organization and equipment of naval combat and service elements; matters of joint concern as to these functions shall be coordinated between the Army, the Air Force, and the Navy.

(c) The United States Marine Corps, within the Department of the Navy, shall include land combat and service forces and such aviation as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign. It shall be the duty of the Marine Corps to develop, in coordination with the Army and the Air Force, those phases of amphibious operations which pertain to the tactics, technique, and equipment employed by landing forces. In addition, the Marine Corps shall provide detachments and organizations for service on armed vessels of the Navy, shall provide security detachments for the protection of naval property at naval stations and bases, and shall perform such other duties as the President may direct: *Provided*, That such additional duties shall not detract from or interfere with the operations for which the Marine Corps is primarily organized. The Marine Corps shall be responsible, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Marine Corps to meet the needs of war.

DEPARTMENT OF THE AIR FORCE

SEC. 207. (a) Within the National Military Establishment there is hereby established an executive department to be known as the Department of the Air Force, and a Secretary of the Air Force, who shall be the head thereof. The Secretary of the Air Force shall be appointed from civilian life by the President, by and with the advice and consent of the Senate.

(b) Section 158 of the Revised Statutes is amended to include the Department of the Air Force and the provisions of so much of title IV of the Revised Statutes as now or hereafter amended as is not inconsistent with this Act shall be applicable to the Department of the Air Force.

(c) The term "Department of the Air Force" as used in this Act shall be construed to mean the Department of the Air Force at the seat of government and all field headquarters, forces, reserve components, installations, activities, and functions under the control or supervision of the Department of the Air Force.

(d) There shall be in the Department of the Air Force an Under Secretary of the Air Force and two Assistant Secretaries of the Air Force, who shall be appointed from civilian life by the President by and with the advice and consent of the Senate.

(e) The several officers of the Department of the Air Force shall perform such functions as the Secretary of the Air Force may prescribe.

(f) So much of the functions of the Secretary of the Army and of the Department of the Army, including those of any officer of such Department, as are assigned to or under the control of the Commanding General, Army Air Forces, or as are deemed by the Secretary of Defense to be necessary or desirable for the operations of the Department of the Air Force or the United States Air Force, shall be transferred to and vested in the Secretary of the Air Force and the Department of the Air Force: *Provided*, That the National Guard Bureau shall, in addition to the functions and duties performed by it for the Department of the Army, be charged with similar functions and duties for the Department of the Air Force, and shall be the channel of communication between the Department of the Air Force and the several States on all matters pertaining to the Air National Guard: *And provided further*, That, in order to permit an orderly transfer, the Secretary of Defense may, during the transfer period hereinafter prescribed, direct that the Department of the Army shall continue for appropriate periods to exercise any of such functions, insofar as they relate to the Department of the Air Force, or the United States Air Force or their property and personnel. Such of the property, personnel, and records of the Department of the Army used in the exercise of functions transferred under this subsection as the Secretary of Defense shall determine shall be transferred or assigned to the Department of the Air Force.

(g) The Secretary of the Air Force shall cause a seal of office to be made for the Department of the Air Force, of such device as the President shall approve, and judicial notice shall be taken thereof.

UNITED STATES AIR FORCE

SEC. 208. (a) The United States Air Force is hereby established under the Department of the Air Force. The Army Air Forces, the Air Corps, United States Army, and the General Headquarters Air Force (Air Force Combat Command), shall be transferred to the United States Air Force.

(b) There shall be a Chief of Staff, United States Air Force, who shall be appointed by the President, by and with the advice and consent of the Senate, for a term of four years from among the officers of general rank who are assigned to or commissioned in the United States Air Force. Under the direction of the Secretary of the Air Force, the Chief of Staff, United States Air Force, shall exercise command over the United States Air Force and shall be charged with the duty of carrying into execution all lawful orders and directions which may be transmitted to him. The functions of the Commanding General, General Headquarters Air Force (Air Force Combat Command), and of the Chief of the Air Corps and of the Commanding General, Army Air Forces, shall be transferred to the Chief of Staff, United States Air Force. When such transfer becomes effective, the offices of the Chief of the Air Corps, United States Army, and Assistants to the Chief of the Air Corps, United States Army, provided for by the Act of June 4, 1920, as amended (41 Stat. 768), and Commanding General, General Headquarters Air Force, provided for by section 5 of the Act of June 16, 1936 (49 Stat. 1525), shall cease to exist. While holding office as Chief of Staff, United States Air Force, the incumbent shall hold a grade and receive allowances equivalent to those prescribed by law for the Chief of Staff, United States Army. The Chief of Staff, United States Army, the Chief of Naval Operations, and the Chief of Staff, United States Air Force, shall take rank among themselves according to their relative dates of appointment as such, and shall each take rank above all other officers on the active list of the Army, Navy, and Air Force: *Provided*, That nothing in this Act shall have the effect of changing the relative rank of the present Chief of Staff, United States Army, and the present Chief of Naval Operations.

(c) All commissioned officers, warrant officers, and enlisted men, commissioned, holding warrants, or enlisted, in the Air Corps, United States Army, or the Army Air Forces, shall be transferred in branch to the United States Air Force. All other commissioned officers, warrant officers, and enlisted men, who are commissioned, hold warrants, or are enlisted, in any component of the Army of the United States and who are under the authority or command of the Commanding General, Army Air Forces, shall be continued under the authority or command of the Chief of Staff, United States Air Force, and under the jurisdiction of the Department of the Air Force. Personnel whose status is affected by this subsection shall retain their existing commissions, warrants, or enlisted status in existing components of the armed forces unless otherwise altered or terminated in accordance with existing law; and they shall not be deemed to have been appointed to a new or different office or grade, or to have vacated their permanent or temporary appointments in an existing component of the armed forces, solely by virtue of any change in status under this subsection.

No such change in status shall alter or prejudice the status of any individual so assigned, so as to deprive him of any right, benefit, or privilege to which he may be entitled under existing law.

(d) Except as otherwise directed by the Secretary of the Air Force, all property, records, installations, agencies, activities, projects, and civilian personnel under the jurisdiction, control, authority, or command of the Commanding General, Army Air Forces, shall be continued to the same extent under the jurisdiction, control, authority, or command, respectively, of the Chief of Staff, United States Air Force, in the Department of the Air Force.

(e) For a period of two years from the date of enactment of this Act, personnel (both military and civilian), property, records, installations, agencies, activities, and projects may be transferred between the Department of the Army and the Department of the Air Force by direction of the Secretary of Defense.

(f) In general the United States Air Force shall include aviation forces both combat and service not otherwise assigned. It shall be organized, trained, and equipped primarily for prompt and sustained offensive and defensive air operations. The Air Force shall be responsible for the preparation of the air forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Air Force to meet the needs of war.

EFFECTIVE DATE OF TRANSFERS

SEC. 209. Each transfer, assignment, or change in status under section 207 or section 208 shall take effect upon such date or dates as may be prescribed by the Secretary of Defense.

WAR COUNCIL

SEC. 210. There shall be within the National Military Establishment a War Council composed of the Secretary of Defense, as Chairman, who shall have power of decision; the Secretary of the Army; the Secretary of the Navy; the Secretary of the Air Force; the Chief of Staff, United States Army; the Chief of Naval Operations; and the Chief of Staff, United States Air Force. The War Council shall advise the Secretary of Defense on matters of broad policy relating to the armed forces, and shall consider and report on such other matters as the Secretary of Defense may direct.

JOINT CHIEFS OF STAFF

SEC. 211. (a) There is hereby established within the National Military Establishment the Joint Chiefs of Staff, which shall consist of the Chief of Staff, United States Army; the Chief of Naval Operations; the Chief of Staff, United States Air Force; and the Chief of Staff to the Commander in Chief, if there be one.

(b) Subject to the authority and direction of the President and the Secretary of Defense, it shall be the duty of the Joint Chiefs of Staff—

(1) to prepare strategic plans and to provide for the strategic direction of the military forces;

(2) to prepare joint logistic plans and to assign to the military services logistic responsibilities in accordance with such plans;

(3) to establish unified commands in strategic areas when such unified commands are in the interest of national security;

(4) to formulate policies for joint training of the military forces;

(5) to formulate policies for coordinating the education of members of the military forces;

(6) to review major material and personnel requirements of the military forces, in accordance with strategic and logistic plans; and

(7) to provide United States representation on the Military Staff Committee of the United Nations in accordance with the provisions of the Charter of the United Nations.

(c) The Joint Chiefs of Staff shall act as the principal military advisers to the President and the Secretary of Defense and shall perform such other duties as the President and the Secretary of Defense may direct or as may be prescribed by law.

JOINT STAFF

SEC. 212. There shall be, under the Joint Chiefs of Staff, a Joint Staff to consist of not to exceed one hundred officers and to be composed of approximately equal numbers of officers from each of the three armed services. The Joint Staff, operating under a Director thereof appointed by the Joint Chiefs of Staff, shall perform such duties as may be directed by the Joint Chiefs of Staff. The Director shall be an officer junior in grade to all members of the Joint Chiefs of Staff.

MUNITIONS BOARD

SEC. 213. (a) There is hereby established in the National Military Establishment a Munitions Board (hereinafter in this section referred to as the "Board").

(b) The Board shall be composed of a Chairman, who shall be the head thereof, and an Under Secretary or Assistant Secretary from each of the three military departments, to be designated in each case by the Secretaries of their respective departments. The Chairman shall be appointed from civilian life by the President, by and with the advice and consent of the Senate, and shall receive compensation at the rate of \$14,000 a year.

(c) It shall be the duty of the Board under the direction of the Secretary of Defense and in support of strategic and logistic plans prepared by the Joint Chiefs of Staff—

(1) to coordinate the appropriate activities within the National Military Establishment with regard to industrial matters, including the procurement, production, and distribution plans of the departments and agencies comprising the Establishment;

(2) to plan for the military aspects of industrial mobilization;

(3) to recommend assignment of procurement responsibilities among the several military services and to plan for standardization of specifications and for the greatest practicable allocation of purchase authority of technical equipment and common use items on the basis of single procurement;

(4) to prepare estimates of potential production, procurement, and personnel for use in evaluation of the logistic feasibility of strategic operations;

(5) to determine relative priorities of the various segments of the military procurement programs;

(6) to supervise such subordinate agencies as are or may be created to consider the subjects falling within the scope of the Board's responsibilities;

(7) to make recommendations to regroup, combine, or dissolve existing interservice agencies operating in the fields of procurement, production, and distribution in such manner as to promote efficiency and economy;

(8) to maintain liaison with other departments and agencies for the proper correlation of military requirements with the civilian economy, particularly in regard to the procurement or disposition of strategic and critical material and the maintenance of adequate reserves of such material, and to make recommendations as to policies in connection therewith;

(9) to assemble and review material and personnel requirements presented by the Joint Chiefs of Staff and those presented by the production, procurement, and distribution agencies assigned to meet military needs, and to make recommendations thereon to the Secretary of Defense; and

(10) to perform such other duties as the Secretary of Defense may direct.

(d) When the Chairman of the Board first appointed has taken office, the Joint Army and Navy Munitions Board shall cease to exist and all its records and personnel shall be transferred to the Munitions Board.

(e) The Secretary of Defense shall provide the Board with such personnel and facilities as the Secretary may determine to be required by the Board for the performance of its functions.

RESEARCH AND DEVELOPMENT BOARD

SEC. 214. (a) There is hereby established in the National Military Establishment a Research and Development Board (hereinafter in this section referred to as the "Board"). The Board shall be composed of a Chairman, who shall be the head thereof, and two representatives from each of the Departments of the Army, Navy, and Air Force, to be designated by the Secretaries of their respective Departments. The Chairman shall be appointed from civilian life by the President, by and with the advice and consent of the Senate, and shall receive compensation at the rate of \$14,000 a year. The purpose of the Board shall be to advise the Secretary of Defense as to the status of scientific research relative to the national security, and to assist him in assuring adequate provision for research and development on scientific problems relating to the national security.

(b) It shall be the duty of the Board, under the direction of the Secretary of Defense—

(1) to prepare a complete and integrated program of research and development for military purposes;

(2) to advise with regard to trends in scientific research relating to national security and the measures necessary to assure continued and increasing progress;

(3) to recommend measures of coordination of research and development among the military departments, and allocation among them of responsibilities for specific programs of joint interest;

(4) to formulate policy for the National Military Establishment in connection with research and development matters involving agencies outside the National Military Establishment;

(5) to consider the interaction of research and development and strategy, and to advise the Joint Chiefs of Staff in connection therewith; and

(6) to perform such other duties as the Secretary of Defense may direct.

(c) When the Chairman of the Board first appointed has taken office, the Joint Research and Development Board shall cease to exist and all its records and personnel shall be transferred to the Research and Development Board.

(d) The Secretary of Defense shall provide the Board with such personnel and facilities as the Secretary may determine to be required by the Board for the performance of its functions.

TITLE III—MISCELLANEOUS

COMPENSATION OF SECRETARIES

SEC. 301. (a) The Secretary of Defense shall receive the compensation prescribed by law for heads of executive departments.

(b) The Secretary of the Army, the Secretary of the Navy, and the Secretary of the Air Force shall each receive the compensation prescribed by law for heads of executive departments.

UNDER SECRETARIES AND ASSISTANT SECRETARIES

SEC. 302. The Under Secretaries and Assistant Secretaries of the Army, the Navy, and the Air Force shall each receive compensation at the rate of \$10,000 a year and shall perform such duties as the Secretaries of their respective departments may prescribe.

ADVISORY COMMITTEES AND PERSONNEL

SEC. 303. (a) The Secretary of Defense, the Chairman of the National Security Resources Board, and the Director of Central Intelligence are authorized to appoint such advisory committees and to employ, consistent with other provisions of this Act, such part-time advisory personnel as they may deem necessary in carrying out their respective functions and the functions of agencies under their control. Persons holding other offices or positions under the United States for which they receive compensation while serving as members of such committees shall receive no additional compensation for such service. Other members of such committees and other part-time advisory personnel so employed may serve without compensation or may receive compensation at a rate not to exceed \$35 for each day of service, as determined by the appointing authority.

(b) Service of an individual as a member of any such advisory committee, or in any other part-time capacity for a department or agency hereunder, shall not be considered as service bringing such individual within the provisions of section 109 or 113 of the Criminal Code (U. S. C., 1940 edition, title 18, secs. 198 and 203), or section 19 (e) of the Contract Settlement Act of 1944, unless the act of such individual, which by such section is made unlawful when performed by an individual referred to in such section, is with respect to any particular matter which directly involves a department or agency which such person is advising or in which such department or agency is directly interested.

STATUS OF TRANSFERRED CIVILIAN PERSONNEL

SEC. 304. All transfers of civilian personnel under this Act shall be without change in classification or compensation, but the head of any department or agency to which such a transfer is made is authorized to make such changes in the titles and designations and prescribe such changes in the duties of such personnel commensurate with their classification as he may deem necessary and appropriate.

SAVING PROVISIONS

SEC. 305. (a) All laws, orders, regulations, and other actions applicable with respect to any function, activity, personnel, property, records, or other thing transferred under this Act, or with respect to any officer, department, or agency, from which such transfer is made, shall, except to the extent rescinded, modified, superseded, terminated, or made inapplicable by or under authority of law, have the same effect as if such transfer had not been made; but, after any such transfer, any such law, order, regulation, or other action which vested functions in or otherwise related to any officer, department, or agency from which such transfer was made shall, insofar as applicable with respect to the function, activity, personnel, property, records or other thing transferred and to the extent not inconsistent with other provisions of this Act, be deemed to have vested such function in or relate to the officer, department, or agency to which the transfer was made.

(b) No suit, action, or other proceeding lawfully commenced by or against the head of any department or agency or other officer of the United States, in his official capacity or in relation to the discharge of his official duties, shall abate by reason of the taking effect of any transfer or change in title under the provisions of this Act; and, in the case of any such transfer, such suit, action, or other proceeding may be maintained by or against the successor of such head or other officer under the transfer, but only if the court shall allow the same to be maintained on motion or supplemental petition filed within twelve months after such transfer takes effect, showing a necessity for the survival of such suit, action, or other proceeding to obtain settlement of the questions involved.

(c) Notwithstanding the provisions of the second paragraph of section 5 of title I of the First War Powers Act, 1941, the existing organization of the War Department under the provisions of Executive Order Numbered 9082 of February 28, 1942, as modified by Executive Order Numbered 9722 of May 13, 1946, and the existing organization of the Department of the Navy under the provisions of Executive

Order Numbered 9635 of September 29, 1945, including the assignment of functions to organizational units within the War and Navy Departments, may, to the extent determined by the Secretary of Defense, continue in force for two years following the date of enactment of this Act except to the extent modified by the provisions of this Act or under the authority of law.

TRANSFER OF FUNDS

SEC. 306. All unexpended balances of appropriations, allocations, nonappropriated funds, or other funds available or hereafter made available for use by or on behalf of the Army Air Forces or officers thereof, shall be transferred to the Department of the Air Force for use in connection with the exercise of its functions. Such other unexpended balances of appropriations, allocations, nonappropriated funds, or other funds available or hereafter made available for use by the Department of War or the Department of the Army in exercise of functions transferred to the Department of the Air Force under this Act, as the Secretary of Defense shall determine, shall be transferred to the Department of the Air Force for use in connection with the exercise of its functions. Unexpended balances transferred under this section may be used for the purposes for which the appropriations, allocations, or other funds were originally made available, or for new expenditures occasioned by the enactment of this Act. The transfers herein authorized may be made with or without warrant action as may be appropriate from time to time from any appropriation covered by this section to any other such appropriation or to such new accounts established on the books of the Treasury as may be determined to be necessary to carry into effect provisions of this Act.

AUTHORIZATION FOR APPROPRIATIONS

SEC. 307. There are hereby authorized to be appropriated such sums as may be necessary and appropriate to carry out the provisions and purposes of this Act.

DEFINITIONS

SEC. 308. (a) As used in this Act, the term "function" includes functions, powers, and duties.

(b) As used in this Act, the term "budget program" refers to recommendations as to the apportionment, to the allocation and to the review of allotments of appropriated funds.

SEPARABILITY

SEC. 309. If any provision of this Act or the application thereof to any person or circumstances is held invalid, the validity of the remainder of the Act and of the application of such provision to other persons and circumstances shall not be affected thereby.

EFFECTIVE DATE

SEC. 310. (a) The first sentence of section 202 (a) and sections 1, 2, 307, 308, 309, and 310 shall take effect immediately upon the enactment of this Act.

(b) Except as provided in subsection (a), the provisions of this Act shall take effect on whichever of the following days is the earlier:

The day after the day upon which the Secretary of Defense first appointed takes office, or the sixtieth day after the date of the enactment of this Act.

SUCCESSION TO THE PRESIDENCY

SEC. 311. Paragraph (1) of subsection (d) of section 1 of the Act entitled "An Act to provide for the performance of the duties of the office of President in case of the removal, resignation, death, or inability both of the President and Vice President", approved July 18, 1947, is amended by striking out "Secretary of War" and inserting in lieu thereof "Secretary of Defense", and by striking out "Secretary of the Navy,".

Approved July 26, 1947.

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